METAL PRODUCTS MANUFACTURING

MPM

*Serving the **Appliance** and Fabricated Metal Products Industry*

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MAY 1961



Central Control System for Coin-Op Laundries — Page V-11



Porcelain Enamel Decorates the Avenue of The Americas — Page 38



Trend in Coin-op Washing and Cleaning — Page V-8



UNIFORM, PRECISE MOLDED PARTS WITH A CLEARING HYDRAULIC

Automatically . . . rings, blocks and discs of carbon graphite are briquetted on this 1,000 ton Clearing hydraulic press. The United States Graphite Company, Division of the Wickes Corporation is able to double the present size range of their product with this machine.

Briquetting pressure and speed, precisely controlled, makes it possible to exercise excellent quality control, produce a highly uniform product.

This custom engineered press is an example of the result when Clearing's Hydraulic Engineering group works with a customer to achieve a more efficient production method. Whatever your production requirements may be—compacting, stamping or drawing—call on a Clearing engineer to discuss your problem. You will find him helpful and there is no obligation.



Write for your copy of Clearing's Hydraulic catalog.

USI Clearing

DIVISION OF U.S. INDUSTRIES, INC.
6499 West 65th Street • Chicago 38, Illinois

See Clearing's Booth at A.S.T.M.E. Exposition New York Coliseum Booth 1440.

Circle No. 312 on Reader Service Card.

Capitalize on high customer acceptance of steel; put the distinctive Steelmark on the products you make.



Armco ZINCGRIP Steel---Low-Cost Corrosion Protection For Dryer Drums

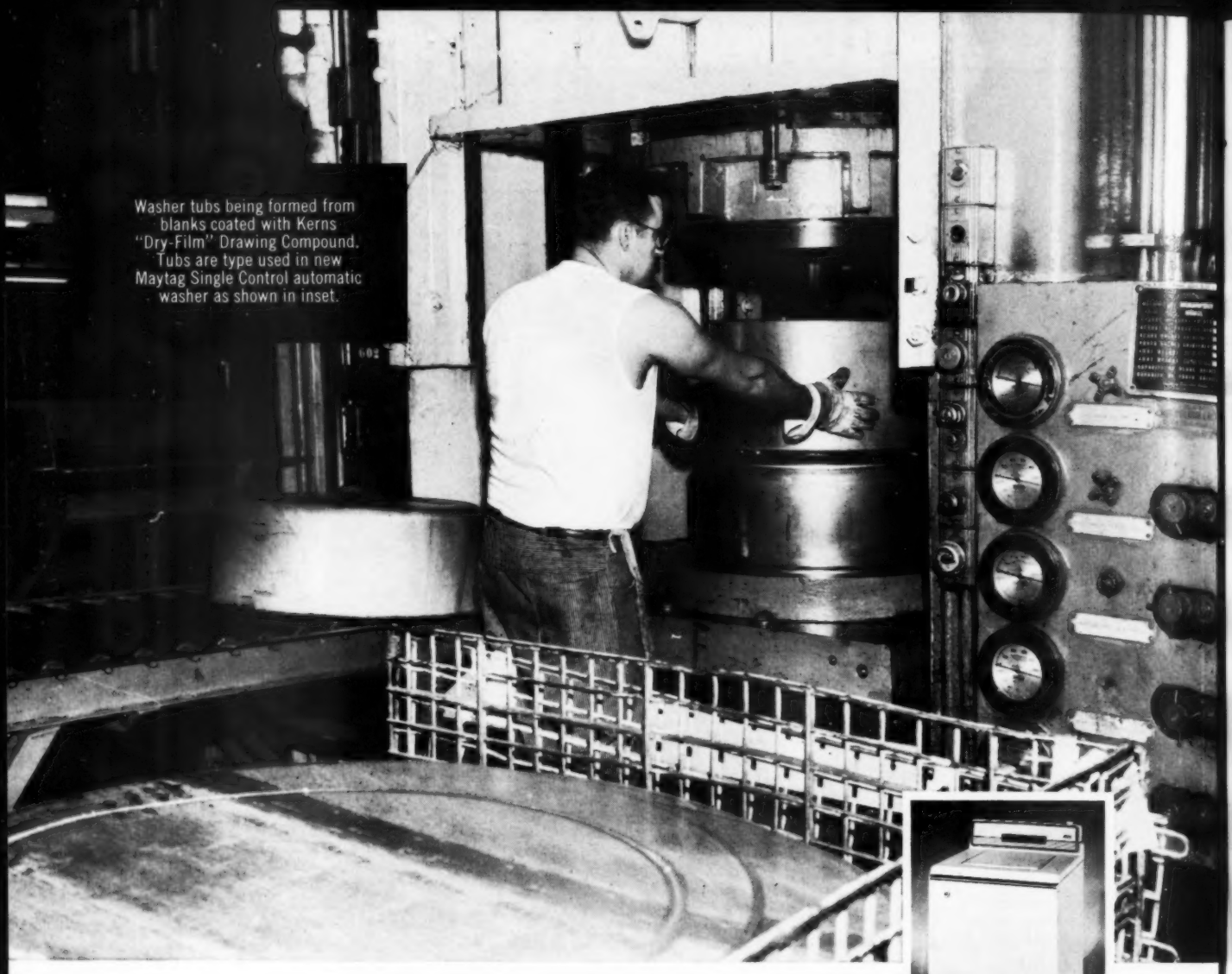
Little boys' trousers are made of denim and brads . . . yes, and pockets full of interesting paraphernalia that can be rough on dryer drums. But you can relieve Mom's washday anxiety by equipping your dryers with drums made of durable Armco ZINCGRIP® Steel.

The coating on this special steel won't chip or peel . . . either in service or during fabrication. The tightly adhering coating is applied by the continuous hot-dip method, developed and perfected by Armco Research.

Give your products the sales advantage of drums that have the low-cost corrosion protection of ZINCGRIP Steel. For complete information, write Armco Steel Corporation, 1851 Curtis Street, Middletown, Ohio.

ARMCO Armco Division

Circle No. 305 on Reader Service Card.



Washer tubs being formed from blanks coated with Kerns "Dry-Film" Drawing Compound. Tubs are type used in new Maytag Single Control automatic washer as shown in inset.

KERNS "DRY-FILM" AIDS MAYTAG ON DIFFICULT DRAWING OPERATIONS

Kerns United researched and developed a specialized Drawing Compound that improved performance and met the high standards of the Maytag Company. Kerns "DRY-FILM" is applied to blanks by a conveyorized set-up and once dry can be stacked for storage. The majority of product components being formed are classified as difficult or deep draws from blanks of enameling iron, cold rolled and zinc coated steel.

Like other leading manufacturers . . . see the results of a specialized lubricant *in your plant* at no cost by taking advantage of Kerns Memo Billing Trial Basis.

Manufacturers of Cutting, Grinding, Drawing, Forging, Phosphatizing, Cleaning, Wire Drawing and Spray Booth Compounds; Rolling Oils, Rust Preventatives, Cling Oils and Specialized Greases.

Write now for Portfolio on "Proper Handling and Application of DRY-FILM Drawing Compound" and/or technical data on any of the above products.



World's largest Exclusive Manufacturer of Specialized Industrial Lubricants.

KERNS UNITED Corporation

2659 East 95th Street • Chicago 17, Illinois

Subsidiary: KERNS PACIFIC Corporation, *630 N. Batavia St., Orange, California*

Offices in Principal Cities throughout the U.S.A.

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MPM

(including finish)

MAY • 1961
VOL. 18 • NO. 5

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MONTHLY TRADE PUBLICATION
Established January 1944
Published by
DANA CHASE PUBLICATIONS, INC.
York Street at Park Avenue, Elmhurst, Illinois
Telephone • TErrace 4-5280 • TErrace 4-5281

NBP BPA

METAL PRODUCTS MANUFACTURING
FROM RAW METAL TO FINISHED PRODUCT

A trade publication devoted to the interests of the metal products manufacturing industry with special editorial attention to home appliances. The editorial scope covers design, engineering, market and statistical information and technical and practical information on plant facilities and all phases of manufacturing "from raw metal to finished product." Free controlled circulation to top management, sales management, purchasing, engineering and key plant management and supervision in metal product manufacturing plants. To others, subscription price is $10.00 per year, domestic. To all other countries $15.00 per year (U.S. funds). Single copies, $1.00.

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DANA CHASE PUBLICATIONS, INC.
PRINTED IN U.S.A.

Accepted as a controlled circulation publication at Aurora, Illinois.

Editor and Publisher • DANA CHASE
Associate Editor • WM. N. LARSEN
Associate Editor • RAY SCHUSTER
Publisher's Assistant • DOROTHEA C. MEEKER
Circulation Manager • KATHRYN BANCROFT
Mgr. Customer Service • DANA CHASE, JR.
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This is McKay

McKAY DIE SHEAR LINES CUT MORE THAN STEEL. The most economical and efficient shear lines in operation today, they are being used by dozens of leading metal producers, fabricators and warehouses to slash shearing costs. Here, McKay Sales Manager Joseph F. Lyden, Jr., and M. G. Slaney, Building Division Manager, The Parkersburg (W. Va.) Rig and Reel Company —one of the nation's fastest growing manufacturers of pre-engineered metal buildings— examine panel sections cut to length by the high speed McKay Die Shear Line in the background.

Photo by Arnold Newman



Machine....

a recognized leader in the development and manufacture of high production metal processing equipment!

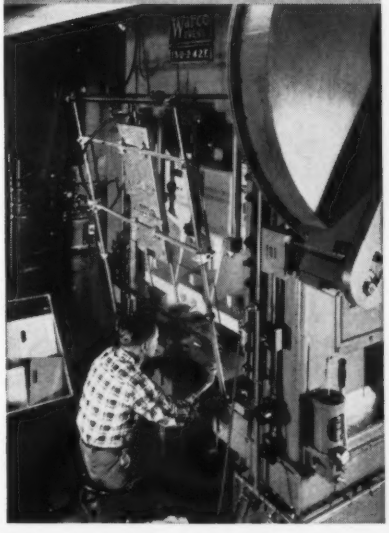
If you fabricate metals and are caught in the "profit squeeze" you'll want to know more about McKay Machine.

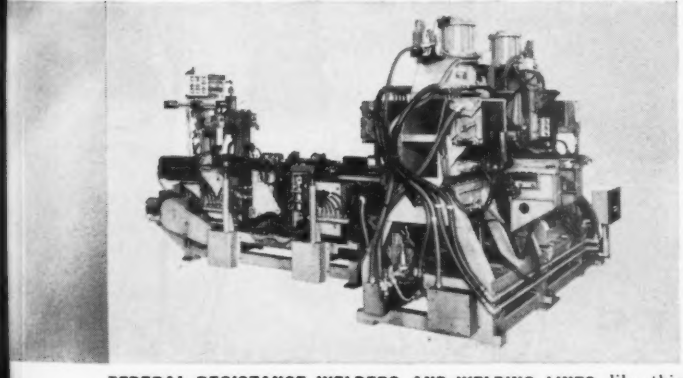
It was McKay Machine that pioneered automated integrated production lines, and it is McKay Machine that is today a leader in this field. We have conceived and produced complete lines for the manufacture of building panels, aircraft and missile sections, appliances, cabinets and components, automotive bodies and parts, and farm equipment—lines that are completely automated from *raw material to finished part or product.*

Whatever you make, if it requires metal handling, feeding, slitting, shearing, stamping, welding or forming, it's just good business to acquaint yourself with *McKay Packaged Production Lines*—high speed production equipment engineered to work in unison—with one-source responsibility from start to finish. Write for literature to *The McKay Machine Company, Youngstown 1, Ohio.*



WARCO MECHANICAL PRESSES—advanced in design, noted for their craftsmanship — are used throughout industry. Typical is the high speed, low maintenance 150-ton straight side crank press pictured here in operation at Eastman Kodak.



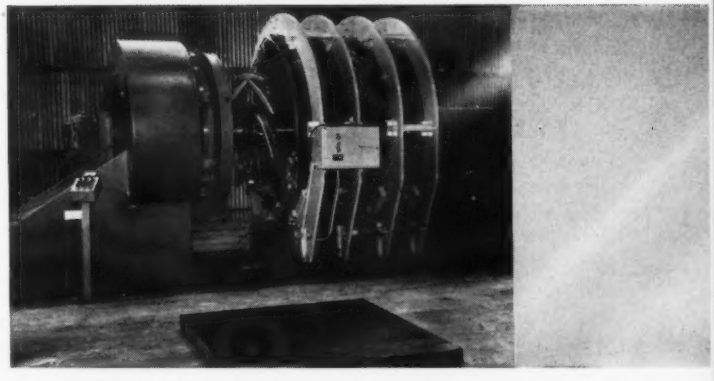


FEDERAL RESISTANCE WELDERS AND WELDING LINES, like this multi-gun combination spot and projection welder used by Hotpoint on their range production line, can be found in the plants of leading metalworking firms the nation over. Individual units, or complete resistance welding lines, are engineered to specifications by McKay's Federal-Warco Division.

LOOK TO

McKAY MCK MACHINE

Circle No. 339 on Reader Service Card.



BERKELEY-DAVIS AUTOMATIC ARC WELDING MACHINERY produced by Berkeley-Davis, Inc., a subsidiary, is highly popular in the aircraft, rocket, automotive and appliance industries. The rocket body welder pictured here is working at Aerojet General, subsidiary of General Tire and Rubber Company.



HOMMEL MATERIALS make Masterpieces

A masterpiece worthy of the spotlight in any decorating scheme . . . We're proud to display this Caloric Range because Hommel porcelain enamel frit helped to make it the masterpiece that it is . . . admired by hostess and guest alike. If you're not using Hommel frit, let us show you how our advanced technical and production facilities teamed with an experienced service force can contribute to your making of masterpieces.

DEPT. MPM – 561

THE O. HOMMEL CO.

PITTSBURGH 30, PA.

West Coast — 4747 E. 49th Street, Los Angeles, California

HOMMEL

Circle No. 328 on Reader Service Card.

WATER HEATERS

Hot water . . . in its relation to home laundry is a subject that seems to run "hot and cold."

The importance of an adequate supply of water at the right temperature for successful operation of a washer is stressed by the Plumbing-Heating-Cooling Information Bureau. The Bureau says, "If the wash is to come out right, there must be plenty of hot water at the right temperature. Less hot water than is needed causes gray and dingy looking wash.

"In some homes," the P-H-C statement continues, "the automatic washer is operated for as many as five successive loads within a period of three or four hours. This means that the heater must have high heating speed." According to the Bureau, an automatic water heater, correctly sized for the hot water requirements in the home, will provide enough hot water to supply all household requirements including those for the automatic washer.

In contrast to this, there are others who will tell us that with the changing characteristics of the garments to be laundered, plus the great advances in detergents, the supply of hot water and its exact temperature have greatly decreased in importance.

Regardless of the opinions of those who build home laundry equipment, produce the garments, or manufacture the detergents, we believe that the opinions and habits of the user must still be taken into consideration.

This brings up a question that has been raised in open technical forums and has been published earlier in the editorial pages of MPM: If an adequate supply of hot water at controlled temperature is important to the satisfactory operation of modern home laundry equipment, how can this be assured in washers that do not incorporate a thermostatically controlled valve?

REFRIGERATORS

Look for a running battle . . . between the metals and plastics industries for the valuable market represented by the refrigerator liner or "tank."

For years the porcelain enameled steel refrigerator liner has been standard for household refrigerators. Available in white or in color, the porcelain enameled interior is represented as being impervious to heat, cold, moisture, and abrasion — practically a must for a quality refrigeration appliance.

For a number of years the plastics industry has been nibbling at this appealing market. Pilot activity was accentuated by steel shortages but seemed to drop by the wayside when steel was again available.

The plastics producers have their own claims to make including: light weight, reduced insulation requirements, and other points which they feel entitle the industry to its share of the business. This threat to the metals industry must be taken seriously now that some manufacturers are offering production models with plastic interiors.

While it may be said that the producers of porcelain enamel and steel are several years behind in a forceful presentation of their side of the competitive story, it seems reasonable to believe that they will not relinquish this valuable market to plastics without a battle royal — which must include research, engineering and promotion.

ALL APPLIANCES

Reliability is a word . . . that will be used more and more throughout the appliance and fabricated metal products field during the coming months as manufacturers bend every effort to regain confidence among users in their ability to engineer good products and their intention to build quality into these products.

One of the early references on this page to "reliability" was in the form of a guest editorial by Marvin A. Fuller, staff engineer, Whirlpool Corp., which appeared in April 1960 MPM. In opening his comments, Mr. Fuller had this to say: ". . . The term *(reliability)* connotes trustworthiness, confidence, and being worthy of dependency. The consumer's desires are for a service, a service which is ever present and reliable. The durable goods industry is looked upon as a complex of corporations which provides the family servants. Indeed, if this thesis be true, the objective of reliability belongs not just to those in technological activities but to every part of the system — administrative, conceptual, production, distribution, and maintenance . . ."

In his guest editorial, Mr. Fuller made good use of Oliver Wendell Holmes' poem, "The Deacon's Masterpiece," and its description of the "one-hoss shay."

We notice that Maytag in its 1961 advertising campaign is stressing "product dependability" (a perfect synonym for reliability). Maytag calls this "its most valuable asset."

According to Maytag, the dependability theme was selected because research surveys have shown that now, more than ever before, consumers are focusing their attention on quality and reliability, rather than on price or gimmicks.

Industry significance in the term "reliability" is indicated by the fact that the AHLMA program for the national meeting at Boca Raton has this subject prominently presented with Dr. Franklin H. Wells, director of research, AMP, Inc., and Dr. Friedrich W. Schwarz, general manager, Electron Division, Controls Co. of America, speaking on the subject. We notice, too, that W. H. Dennler, general manager, Major Appliance Division, GE, will speak on "Total Satisfaction — The Home Laundry Goal," which would seem to be another way of expressing reliability.

Dana Chase

EDITOR AND PUBLISHER

B.F.Goodrich

New way to protect your metal product... a temporary but tough coat of Geon



Panels for this building were coated and fabricated by Elwin G. Smith Company, Pittsburgh, using "Strip-Gard" strippable vinyl coating made with Geon vinyl by Stoner-Mudge Company, Pittsburgh, a Division of American-Marietta Company. It can be applied by all standard methods including brush, reverse roll, spray, dip, flow and conventional roll coating. B.F.Goodrich Chemical Company supplies the Geon vinyl.

Here's a temporary coating that goes on metal fast, strips off easily. Meanwhile, it gives polished, embossed or coated metals protection during fabrication, storage and shipping. It's an organosol based on Geon vinyl.

Since the coating stretches well and is very flexible, you can corrugate, emboss, roll-form or draw metals coated with it without affecting the coating. In some cases, it eliminates the need for lubrication. Wear on expensive plated or polished dies is significantly reduced. And there's no need for final cleanup after fabrication or assembly.

Because it's made of Geon, the coating protects metals from the effects of oil, grease and from discoloration or etching of corrosive chemicals. It provides excellent resistance to scratching or abrasion. The manufacturer says it's not designed to protect against weathering, but it will—tests show no staining or embrittlement outdoors for periods up to six months. And the desirable stripping qualities are not impaired.

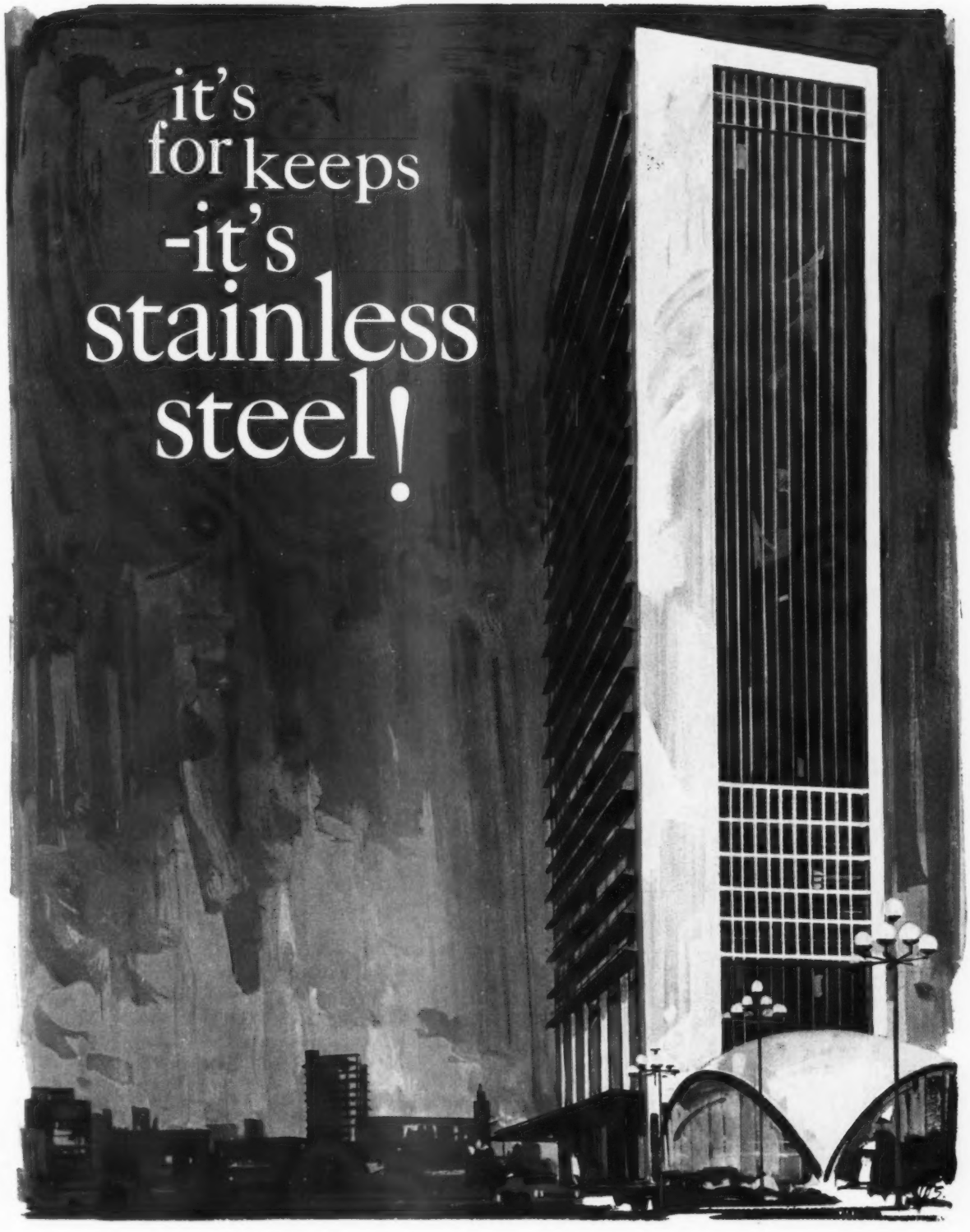
Here's another way that Geon vinyl is opening new markets, making possible new or improved products. Want more information? Write Department NB-3, B.F.Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, Ohio. In Canada: Kitchener, Ontario.

B.F.Goodrich Chemical

a division of The B.F.Goodrich Company

Geon VINYLS

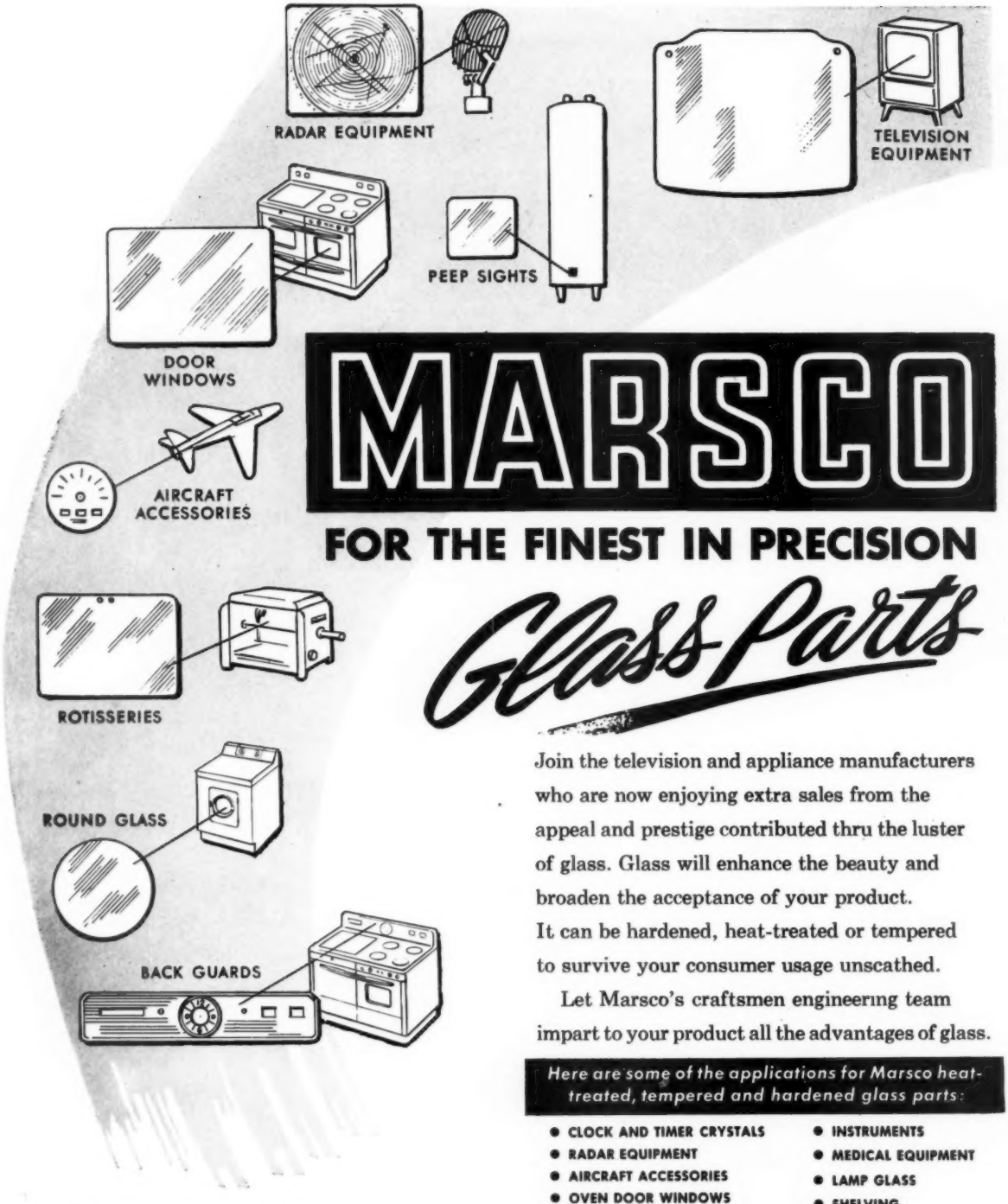
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Stainless—the building metal of permanence, economy and beauty.
McLouth Steel Corporation, Detroit 17, Michigan

Look for the **STEELMARK** on the products you buy

McLOUTH STAINLESS STEEL



MARSCO

FOR THE FINEST IN PRECISION *Glass Parts*

Join the television and appliance manufacturers who are now enjoying extra sales from the appeal and prestige contributed thru the luster of glass. Glass will enhance the beauty and broaden the acceptance of your product. It can be hardened, heat-treated or tempered to survive your consumer usage unscathed.

Let Marsco's craftsmen engineering team impart to your product all the advantages of glass.

Here are some of the applications for Marsco heat-treated, tempered and hardened glass parts:

- CLOCK AND TIMER CRYSTALS
- RADAR EQUIPMENT
- AIRCRAFT ACCESSORIES
- OVEN DOOR WINDOWS for both Conventional and Built-In Ranges
- LIGHT LENSES
- PHOTOGRAPHIC EQUIPMENT
- DIALS AND NAME PLATES
- TELEVISION EQUIPMENT
- INSTRUMENTS
- MEDICAL EQUIPMENT
- LAMP GLASS
- SHELVING
- ROTISSERIES
- WASHING MACHINES
- DRYERS
- PEEP SIGHTS FOR WATER HEATERS

Special Shapes for: Instruments, Gauges, Household and Industrial Appliances.

ask for the man from *Marsco*

MARSCO MFG. CO., 2901 S. HALSTED ST., CHICAGO 8, ILL.

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Ing-Rich ceramic engineers have a

big edge

We are reasonably sure that our laboratories for research and testing frits are on a par with any other laboratory in the country. We are also reasonably sure that our ceramic engineers are among the top-flight men of the country.

then . . . comes the big edge

We believe that any ceramic engineer will agree that after every possible exhaustive test in the laboratory there comes another test that is of equal importance . . . what happens under practical working conditions.

Our Ceramic Engineers have the tremendous advantage of day in and day out contact with a practical proving ground.

Here, in our large porcelain enameling plant where we enamel our own products and also do a large job enameling business, our ceramic engineers are in daily contact with practical working conditions.

Out of our laboratories come a wide range of frits used on a wide range of products in our own enameling plant. Here, you have that rare combination of science working hand in hand, day after day, with old man practical experience. This "big edge" is paying off for our Frit Customers.

Pioneer Producer of
LIFETIME
Porcelain Enamel Products

INGRAM-RICHARDSON, INC.

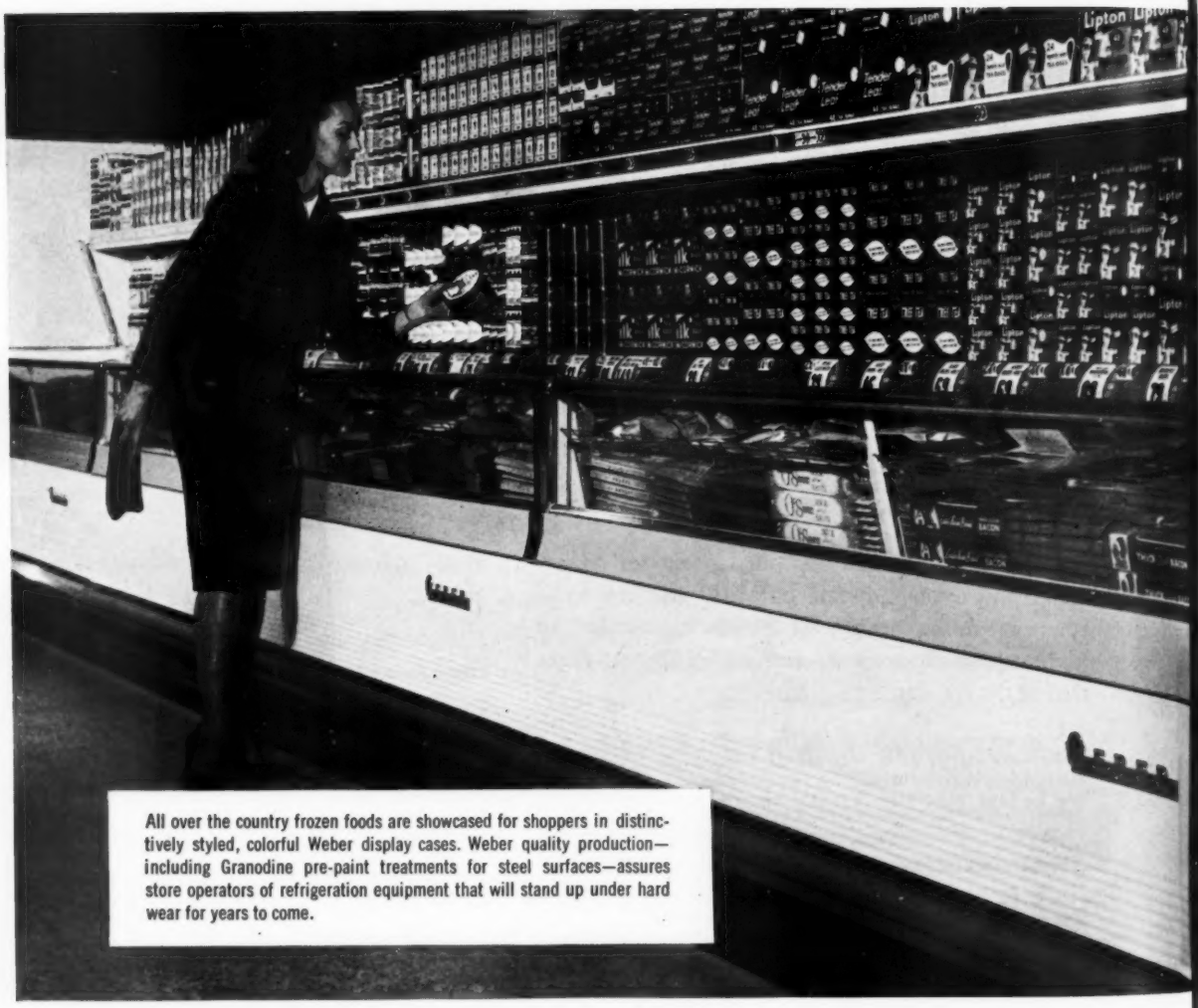
OFFICES, LABORATORY AND PLANT
FRANKFORT, INDIANA

ING-RICH
FRIT
"The Plant Tested Frit"

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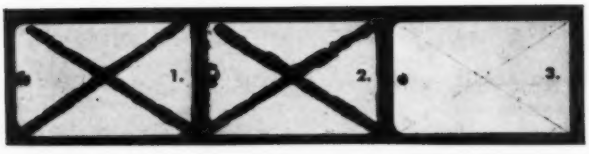
Take a lead from the leaders . . .

Three Amchem GRANODINE Pr
Pre-Paint Economy and Qu



All over the country frozen foods are showcased for shoppers in distinctively styled, colorful Weber display cases. Weber quality production—including Granodine pre-paint treatments for steel surfaces—assures store operators of refrigeration equipment that will stand up under hard wear for years to come.

GRANODINE—The obvious difference in pre-paint treatments



1. Solvent-cleaned—panels failed after 100 hours of accelerated testing.
2. Alkali-cleaned—panels failed after 100 hours of accelerated testing.
3. Granodine-treated—panels excellent after 336 hours of accelerated testing.

*Phosphate Systems Provide Quality at Weber Showcase

One line alone achieves fuel savings of $9,000 per year; all three lines maintained by one operator for added labor savings!

Versatile Weber Showcase & Fixture Company, Inc., headquartered in Los Angeles, places a high premium on quality of its diversified line—supermarket display cases, coolers and fixtures, prefabricated partitions, flooring and lab equipment to mention a few.

High on Weber's quality requirement list is pre-paint treatment of steel products. And their first choice in zinc phosphate coatings is Amchem Granodine. Weber employs three separate Granodine phosphating lines to process hot- and cold-rolled steel.

Prime advantage of Granodine, according to Weber management, is "*Granodine gives us a better piece of merchandise as far as eye-appeal, wearability and service life are concerned.*" Additional savings continue to be recorded in time and labor (a single operator adequately controls all three lines), and a substantial $9,000 annual fuel savings (via use of a Granodine cold zinc phosphate).

Take a lead from the leaders. If you fabricate steel products—if you want uniform quality in paint adhesion and corrosion resistance—if you want personalized technical service that adds savings in time, labor and cash to your operation, you want to investigate Granodine by Amchem. A call to your local Amchem Representative will furnish you facts and figures.

*Granodine is Amchem's registered trademark for its conversion coating chemical used to produce phosphate coatings on steel.



Weber's newest Granodine chemical line handles steel shelving, large cooler boxes suspended from conveyor.



On Weber's third Granodine chemical line—a cold zinc phosphate—Weber Wall Sheet enters the washer.



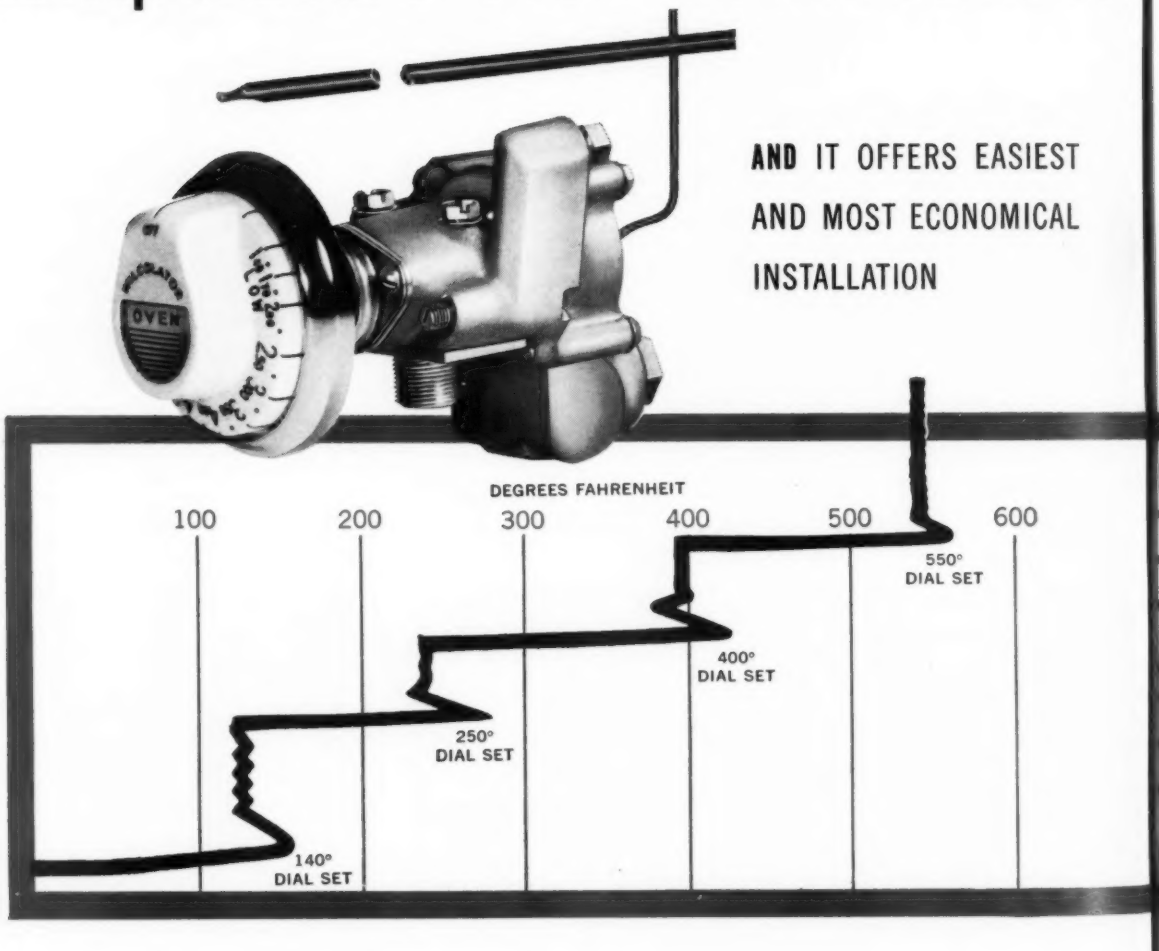
Exiting at right from cold Granodine washer, Weber Wall Sheets receive prime coat spraying.

AMCHEM **GRANODINE**

Amchem is a registered trademark of **AMCHEM PRODUCTS, INC.** (Formerly American Chemical Paint Co.)
AMBLER, PA. • Niles, Calif. • Detroit, Mich. • St. Joseph, Mo. • Windsor, Ont.

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Look how accurately the new Wilcolator XL controls oven temperature even down to 140°



AND IT OFFERS EASIEST AND MOST ECONOMICAL INSTALLATION

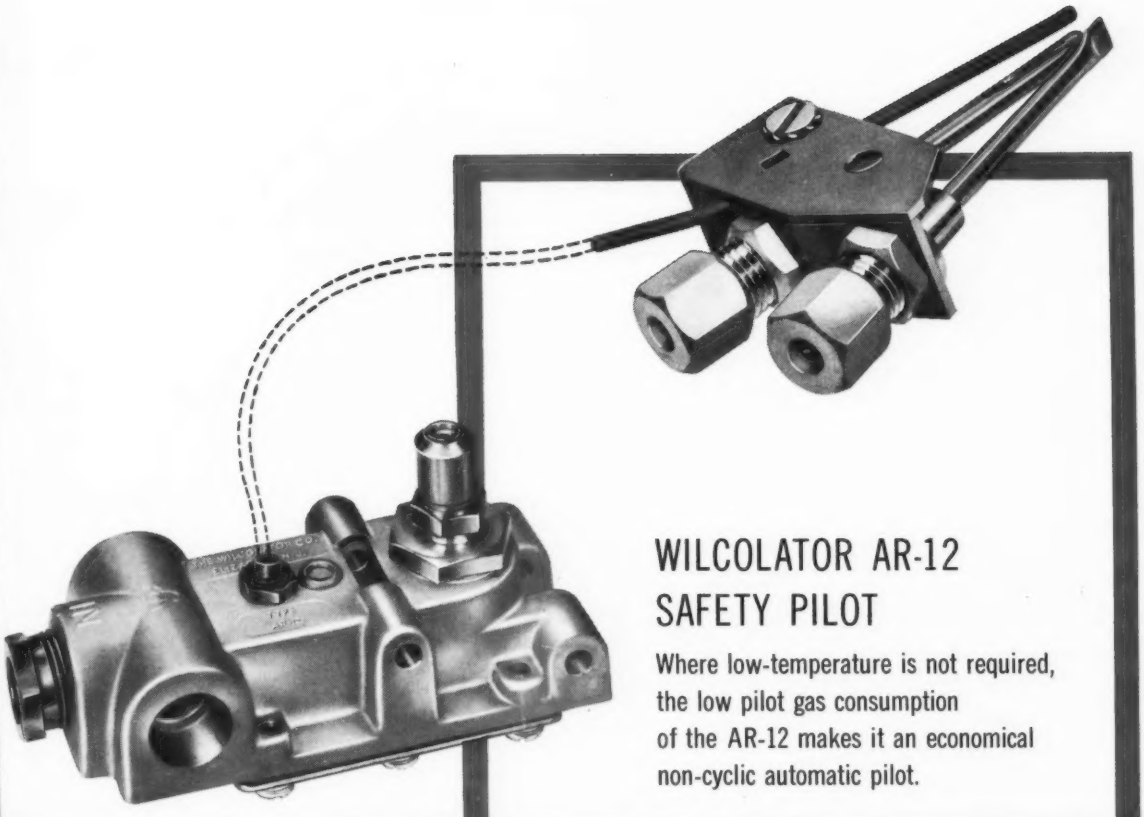
TEMPERATURE RANGE:

140-550°F (60-288°C), plus broil

AGA RATING, BTU/HR:

Manufactured gas	49,000
Natural gas	72,500
LP gas	154,000

Below 325°F the XL initiates a cycling action for temperature control by shutting off the burner pilot. This in turn closes the safety pilot. When the oven has cooled and more heat is required, the XL again admits gas to the burner pilot, which is ignited by the standby pilot. This opens the safety pilot and permits gas to flow to the main burner. This system achieves extremely close temperature control.



WILCOLATOR AR-12 SAFETY PILOT

Where low-temperature is not required, the low pilot gas consumption of the AR-12 makes it an economical non-cyclic automatic pilot.

XL FEATURES

- Easily incorporated into any gas range—compact, with choice of four different outlet positions
- Special fittings and brackets unnecessary, minimum tubing, simplicity of manifold design
- Valve and seat, constructed of corrosion-resistant aluminum alloy, provide smooth, low-torque turning action at both high and low temperatures
- Stainless steel diaphragm
- Calibration, bypass and pilot adjustments all made from front of stove
- Flange bolts and lockwashers supplied preassembled for faster installation
- Flange plate recesses into thermostat body, pre-positioning the thermostat with respect to flange plate for quick, accurate assembly
- Snap-on dial and bezel

The most compact pilot on the market today, the AR-12 can be used in connection with the Wilcolator low-temperature control or with a Wilcolator XC standard oven control. The AR-12 features ease of mounting, faster valve action, high-speed shutoff and the lowest Btu consumption for both primary and secondary pilots. There are three choices of inlet, and the body can be mounted in any position. Faster valve action, high-speed shutoff, high ambient rating, non-aerated lintless pilot, and universal orifice are other features. When used as a straight safety pilot in combination with the Wilcolator XC, there is no waiting for main burner ignition. Write for the new Wilcolator data sheet covering both these products.

Thermostats for Every Heating and Cooling Application

THE Wilcolator COMPANY

THE WILCOLATOR COMPANY
1001 NEWARK AVE., ELIZABETH, N. J.
Subsidiaries and/or affiliates in
Canada, Great Britain, Italy, West Germany, and Australia

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If you're looking for the simple, economical way to meet your steel needs, it will pay you to *look locally* . . . to look to your nearest Steel Service Center. There you'll find:

PROMPT DELIVERY—usually from LOCAL stocks.

WIDE SELECTION—many types available from your LOCAL Steel Service Center.

FABRICATION ASSISTANCE—the right answers to your design and fabrication problems . . . supplied by LOCAL qualified specialists.

LOWER INVENTORY INVESTMENT—an expense borne instead by your LOCAL Steel Service Center.

STORAGE SPACE—also furnished by your LOCAL supplier.

Get in touch with your dependable LOCAL source for steel . . . your Steel Service Center. See your Classified Telephone Directory for listings.

Alan Wood supplies major Steel Service Centers with high quality plate, sheet and strip . . . chances are *your* Steel Service Center is among those we serve.

ALAN WOOD STEEL COMPANY

Conshohocken, Pa. • STEEL PRODUCERS WITH THE CUSTOMER IN MIND

DISTRICT OFFICES AND REPRESENTATIVES: Philadelphia • New York • Los Angeles • Boston • Atlanta Cincinnati • Cleveland • Detroit • Houston • Pittsburgh • Richmond • St. Paul • San Francisco • Seattle Montreal, Toronto and Vancouver, Canada—A. C. Leslie & Co., Ltd.

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MPM

newsquotes

Why should we refuse to trade with the free world — and tariff and customs barriers are in practice a refusal — when trade serves our own self-interest?—*Charles H. Percy, Bell and Howell.*

Some segments of the appliance industry, which have capacity well in excess of the nation's annual sales needs, attempted to rectify over-production by the fallacious method of price cutting. Hupp, by not over-producing, maintained more favorable inventories and better price stability. — *John O. Ekblom, Hupp Corp.*

Profitable production in mechanized or automated departments literally depends on quality maintenance. — *R. L. Kirkpatrick, Westinghouse.*

Within two years or less, we shall see automatic, unattended laundries and dry cleaning establishments grossing a billion dollars annually — and that is only the beginning. As more services are added, the service centers will get larger, more numerous and more efficient, with better service at lower cost for the consumer. — *Jack R. Coleman, Small Equipment Sales, American Laundry Machinery Industries.*

When our competitor can provide the same product we are selling today, we must have a new development to offer. And when he matches that one, we must have a third ready for the market. — *Logan T. Johnston, Armco Steel Corp.*

There will be 11,700,000 central oil-fired heating systems operating in the United States by the end of the sixties. This is an increase of about 2,300,000 over the number of central oil-fired heating systems in operation at the end of 1960. An average net gain of 2.2 percent in the number of central oil-fired systems is predicted for the period from 1960 to 1970. — *Plumbing-Heating-Cooling Information Bureau.*

In too many cases, the cost of such [purchased component] parts could be lessened if the user company would fully utilize the vast knowledge and experience of his supplier. — *Orrin B. Werntz, National Screw Machine Products Association.*

If the money charged at retail for the difference between a one and two-speed room air conditioner were put into better corrosion-resisting parts, better motors, better everything, the manufacturer would have a much finer product, one that would last longer, and one that from the user's viewpoint would be no less desirable. — *Anonymous.*

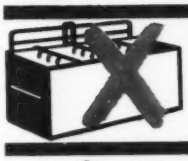
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American Nickeloid Pre-Plated Metals * Save 25% or More on Material Costs!!!



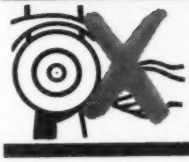
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NICKELOID METALS SINCE 1899 N.M

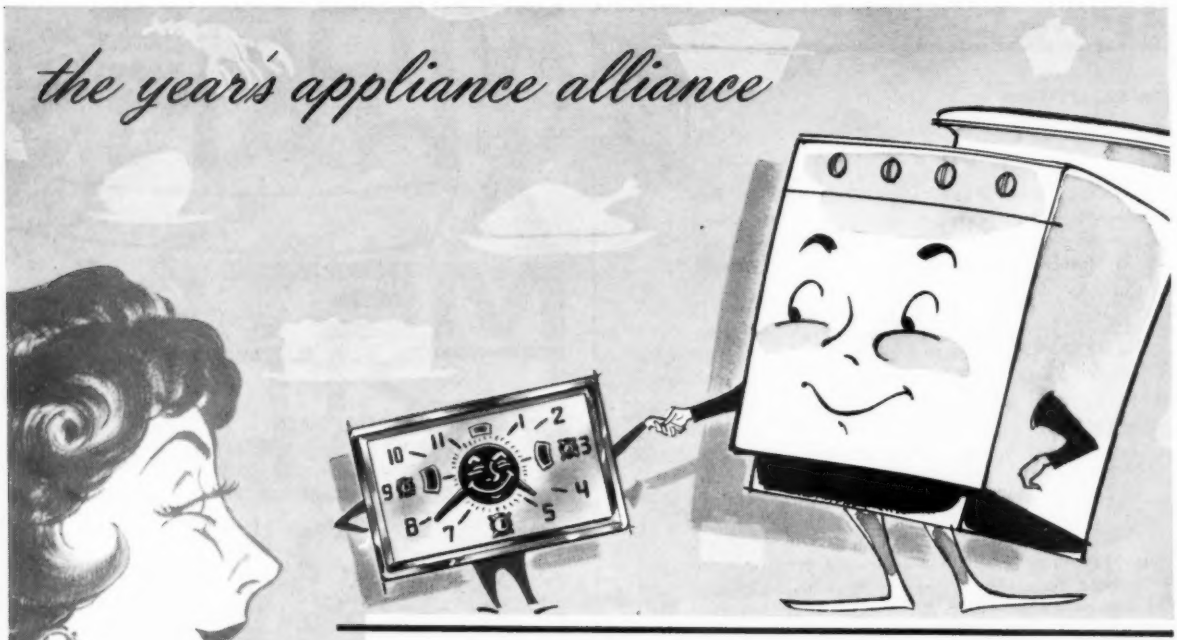
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Circle No. 302 on Reader Service Card.

the year's appliance alliance



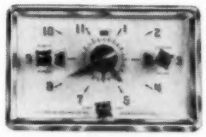
LUX ENSURES THE SUCCESS OF TODAY'S QUICK-TIME COOK

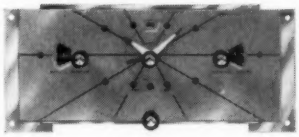
The miraculous speed with which some modern appliances perform really puts the pressure on the timing device for satisfactory results.

Take today's vastly improved ranges, for example; assisted by the lightning-like micron ray feature, much cooking is a quick-time thing that depends almost solely on a precision timer for succulent success . . . and leading range manufacturers knowingly make it a Lux Timer.

Built to behave with reliable and enduring split-second precision, the Lux Timer truly takes over the task of timing meat, fish, and fowl to a T (for taste, of course), and eliminates the disappointing flavor-loss caused by inaccurate timing.

In millions of appliances—ranges, washers, dryers, rotisseries, and more —for the critical timing function, Lux is the choice.





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LUX Time

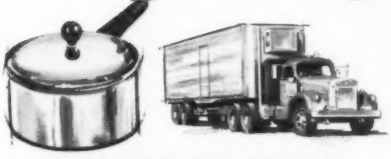
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Now Fairmont creativity combines the advantages of two great metals



FROM POTS AND PANS TO REFRIGERATED TRUCK BODIES

Cooking utensils which combine the excellent heat transfer properties of aluminum with the resistance to food acids of stainless steel. Or refrigerated transport which meets stainless regulations and also makes use of aluminum's light weight for bigger payloads. Or what have you? Fairmont Stainless Clad Aluminum will revolutionize a complete field of metal fabrication. Get in on the ground floor with Fairmont!

THEY SAID IT WASN'T PRACTICAL. But an intensive research program has been concluded, and Fairmont's new Stainless Clad Aluminum is now being rolled on a production basis, via patented methods providing a perfect molecular bond.

By successfully combining the ductility, light weight and high conductivity of aluminum with the strength, corrosion resistance and lustrous beauty of the stainless steel, Fairmont has opened doors wide to a thousand and one product improvements leading to more sales and new products by fabricators of all kinds.

Initially, Fairmont Stainless Clad Aluminum is being produced in flat sheet and flat circles or blanks. Other sheet forms will be made available in the not too distant future. For fabricators who know it pays to plan ahead, NOW is the time to call in a Fairmont representative for detailed facts, figures, application ideas.

FAIRMONT ALUMINUM COMPANY

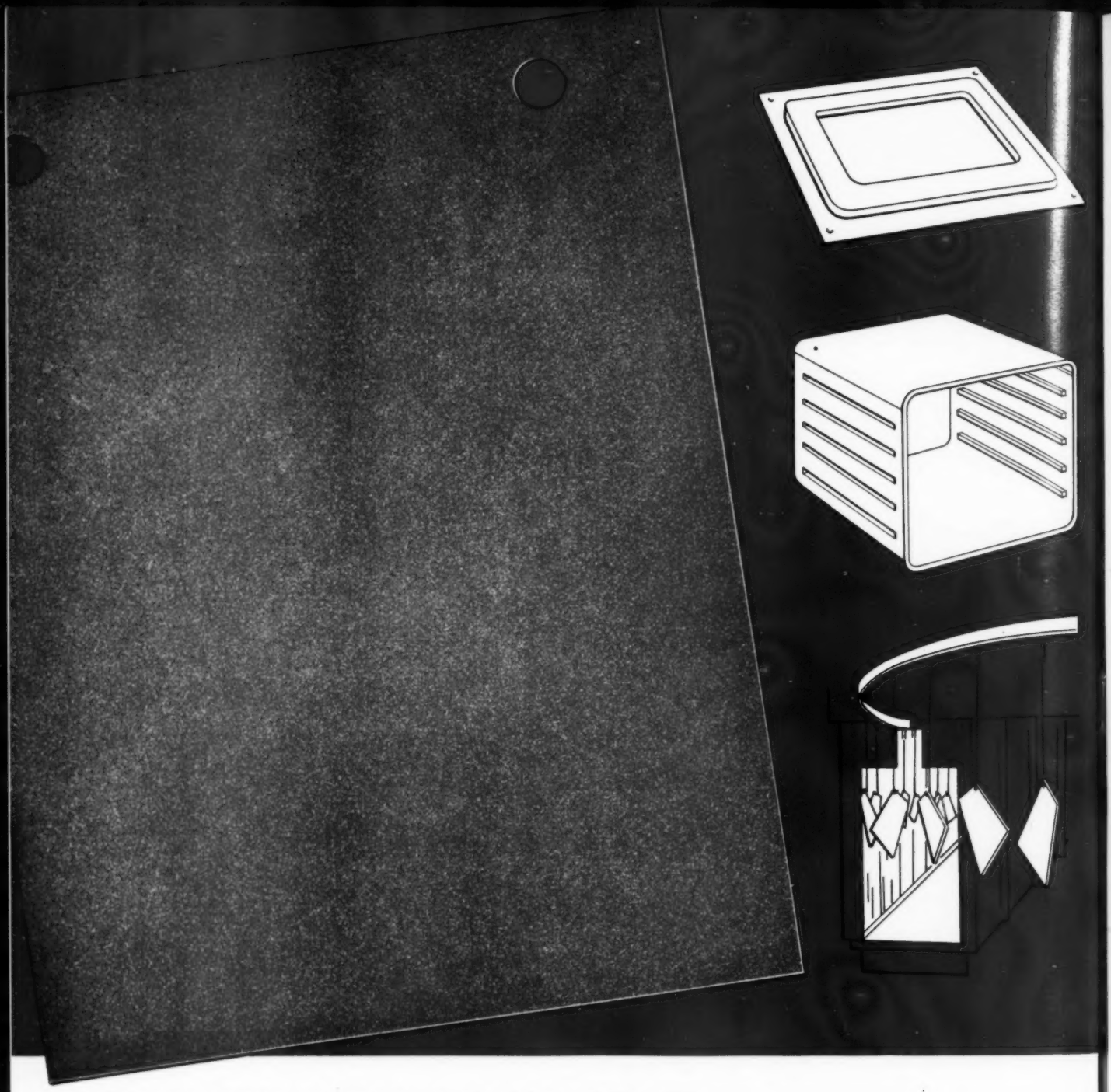
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ANY WAY YOU LOOK AT IT...

this new Gray Ground Coat offers real advantages

Radically new, a real *break-through* — and proved completely practical by a big-volume, top-quality appliance manufacturer during the past eight months.

Provides excellent coverage at *3-mils* thickness . . . with less black specking and tearing, a minimum of drain streaking, fewer rejects due to chippage and assembly-line damage.

Half the thickness of earlier gray ground coats, it requires less reinforcing of the metal, can be fired at lower temperatures (1440° F.), has much greater alkali resistance (3½ to 4 mg./in² weight loss compared to 15 to 16 mg.), successfully withstands normal flexing and handling.

You'll like its color, its smoother surface texture. And you'll like the production economies it makes possible. There's nothing else like it. We invite you to prove this fact for yourself! Write for full information.

FERRO **FERRO CORPORATION**
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MPM

Industry meetings

NATIONAL

APPLIANCES

Appliance Technical Conference, Kentucky Hotel, Louisville, Ky., May 1-3, 1961.

LEAD INDUSTRY

The 33rd Annual Meeting of the Lead Industries Association, Drake Hotel, Chicago, Ill., May 2-3, 1961.

LUBRICATION SYMPOSIUM

The American Society of Mechanical Engineers' 1961 Spring Lubrication Symposium, Deauville Hotel, Miami Beach, Fla., May 8-10, 1961.

HYDRAULICS CONFERENCE

The American Society of Mechanical Engineers' and The Engineering Institute of Canada's Third Annual National 1961 Hydraulics Conference, Queen Elizabeth Hotel, Montreal, Canada, May 8-11, 1961.

CASTINGS

The American Foundrymen's Society's Castings Congress and Exposition, Brooks Hall, San Francisco, Calif., May 8-12, 1961.

PRODUCTION ENGINEERING

The American Society of Mechanical Engineers' 4th Annual National Production Engineering Conference, Royal York Hotel, Toronto, Canada, May 9-12, 1961.

PACKAGING

Packaging Industry Technical Conference of the American Institute of Electrical Engineers, New Ocean House, Swampscott, Mass., May 15, 1961.

DESIGN ENGINEERING

Design Engineering Show, Cobo Hall, Detroit, Mich., May 22-25, 1961.

PACKAGING

The Packaging Institute's Joint Meeting with Institute of Food Technologists, Hotel Syracuse, Syracuse, N. Y., May 24, 1961.

APPLIANCE MANUFACTURERS

The Institute of Appliance Manufacturers 29th Annual Convention-Exhibit, Netherland Hilton Hotel, Cincinnati, Ohio, June 4-6, 1961.

ELECTRICAL MANUFACTURERS

National Electrical Manufacturers' Association's Western Conference, The Biltmore Hotel, Los Angeles, Calif., June 7-9, 1961.

HOME FURNISHINGS

International Home Furnishings Market, The Merchandise Mart, Chicago, Ill., June 18-24, 1961.

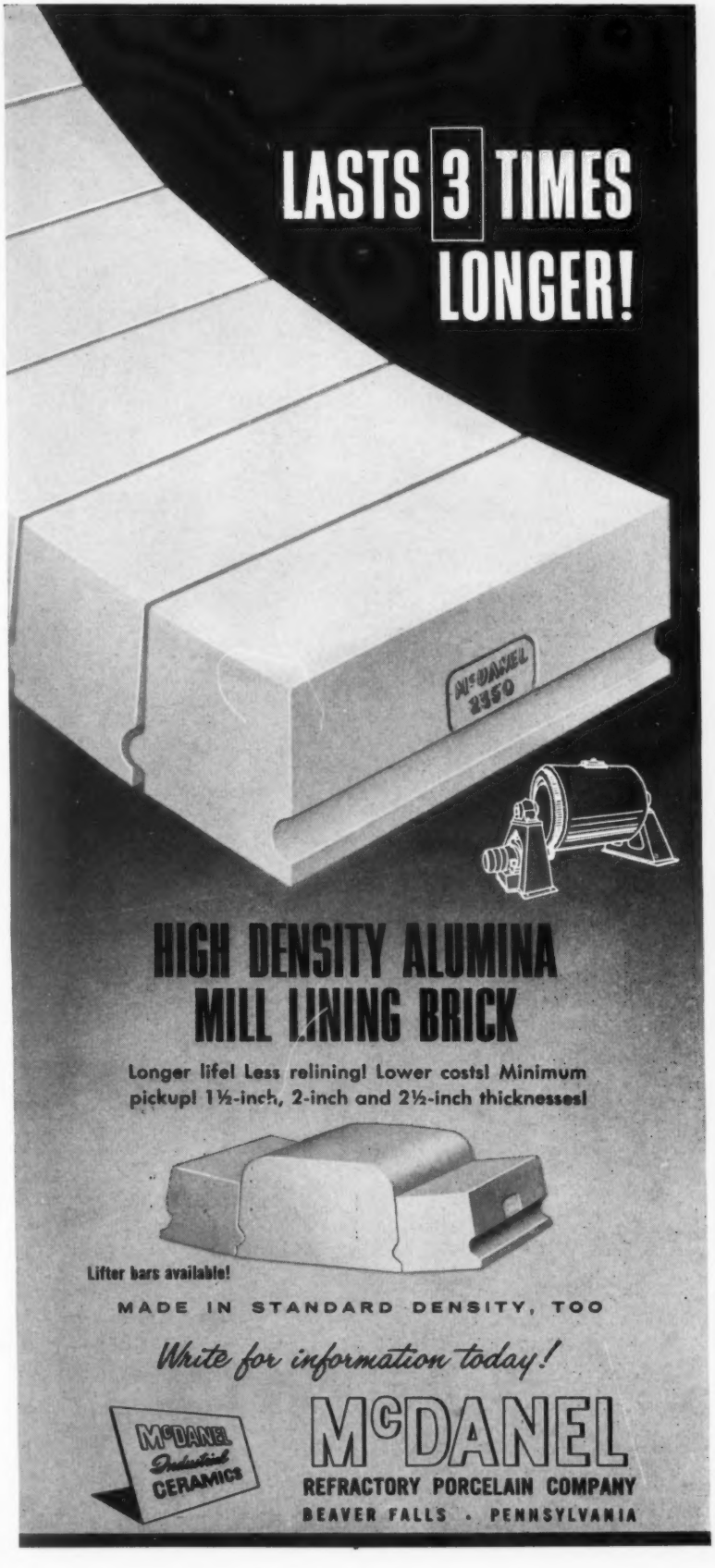
SECTIONAL

GAS APPLIANCES

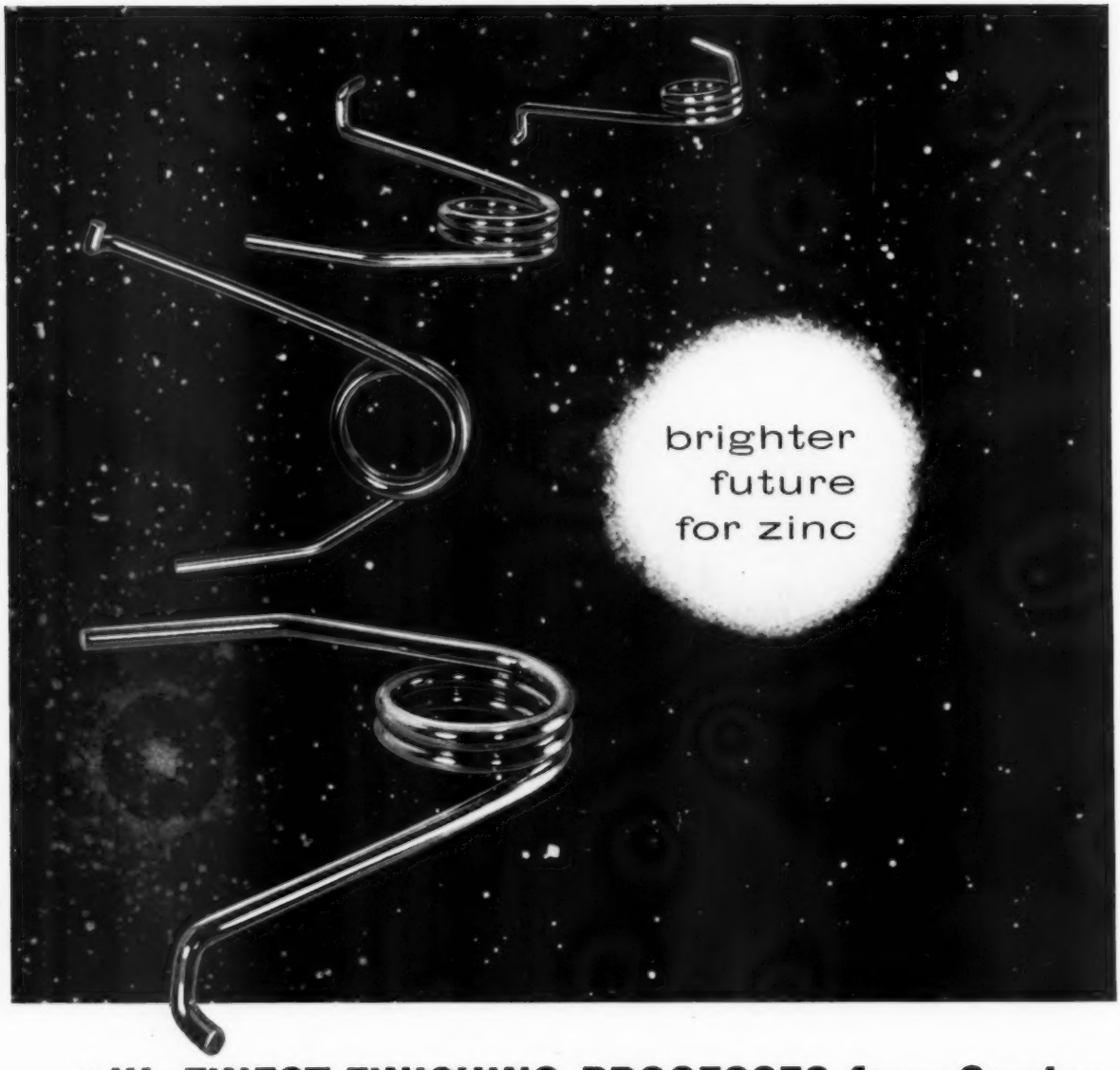
The Gas Appliance Engineers' Society (Midwest Chapter) Meeting, Mickleberry Restaurant, Route 30, Chicago Heights, Ill., May 10, 1961.

ENAMELER'S CLUB

Midwest Enameler's Club Maypole Party, Lincolnshire Country Club, Crete, Ill., May 19, 1961.



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Looking for better zinc plating results? . . . Cowles has a complete line of zinc brighteners that provide all degrees of lustre from high brilliance to soft satin to give a new look to your products, speed up processing and produce more uniform results.

Cowles' complete plating services go far beyond zinc brighteners. You can depend on Cowles products and processes for every phase of cleaning, phosphating, conversion coating, coloring and final protection. Your Cowles Technical Man can demonstrate immediate improvement in your own operation with Cowles Finest Finishing Processes. Take advantage of it — call Cowles today!

Ask your Cowles Technical Man about these brighteners . . .

for low current density cyanide zinc electroplating:
PROMAT B4
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PROMAT ZB2

for high current density cyanide zinc electroplating:
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*MPM is distributed without charge to top management, sales management, purchasing, engineering, and key plant management and supervision in plants producing appliances and fabricated metal products.

QUICK DIE CHANGE PRESS

Danly Machine Specialties, Inc. is offering Bulletin Q.D.C.-1 which tells how their quick die change press can reduce die change downtime. It is stated that one self-propelled bolster assembly rolls the old die out of the press at the same time that another one rolls the new die in.

Circle No. 101 on Reader Service Card.

FRACTIONAL HP MOTOR STOCKS, PRICES

A new price list and stock bulletin (PL-SB 2820) on fractional horsepower motors is available from the Westinghouse Electric Corp. The publication lists all standard fractional horsepower motors normally carried in stock and available for short delivery. The six-page publication covers over 500 different general and special purpose motors including jet pump motors, oil burner motors, belt-drive furnace blower motors, air circulating motors and sump-pump types. The bulletin will be reissued monthly with up-to-date information.

Circle No. 102 on Reader Service Card.

MINIATURE LAMPS

Miniature lamps which were originally developed for use in medical diagnostic instruments are proving useful in many industrial and technical applications, according to Welch Allyn, Inc., which offers 14 different miniature lamp in-stock styles and special styles made for specific customer needs. These lamps are said to be brilliant and durable with projected beams of light exceptionally free from filament shadows or other aberrations. A new bulletin showing all 14 in-stock styles in actual size, with essential dimensions and electrical characteristics of each, is available.

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SOLID-FILM LUBRICATING STICK

Typical extreme pressure applications of Molykote Lubricating Sticks are the subject of data sheet 128 published by The Alpha-Molycote Corp. According to the data sheet the lubricating stick, which contains molybdenum disulfide solid lubricant in a resin binder, is particularly useful on grinding wheels and cutting tools. In addition, the two-page, two-color bulletin also gives tips for effective application.

Circle No. 104 on Reader Service Card.

LOW FIRING PORCELAIN ENAMELS

Porcelain enamels for steel with firing temperatures 500° below conventional enamels is the subject of a new four-page supplement to "Lead in the Ceramic Industries" published by Lead Industries Association. Because these new enamels fire at only 1000 to 1100° F, drastic reductions in furnace costs, maintenance and fuel costs are claimed, as are expanded product lines. The supplement gives full details on both these points.

Circle No. 105 on Reader Service Card.

INDUSTRIAL GAS EQUIPMENT

Applications of commercial gases to industrial processes are thoroughly described in a completely new 16-page illustrated brochure, released by Gas Appliance Service, Inc. The new brochure shows the Furk-

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102	118	134	150	166	182	198	214	230	246	302	318	334	350	366	382	398	414	430	446
103	119	135	151	167	183	199	215	231	247	303	319	335	351	367	383	399	415	431	447
104	120	136	152	168	184	200	216	232	248	304	320	336	352	368	384	400	416	432	448
105	121	137	153	169	185	201	217	233	249	305	321	337	353	369	385	401	417	433	449
106	122	138	154	170	186	202	218	234	250	306	322	338	354	370	386	402	418	434	450
107	123	139	155	171	187	203	219	235	251	307	323	339	355	371	387	403	419	435	451
108	124	140	156	172	188	204	220	236	252	308	324	340	356	372	388	404	420	436	452
109	125	141	157	173	189	205	221	237	253	309	325	341	357	373	389	405	421	437	453
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113	129	145	161	177	193	209	225	241	257	313	329	345	361	377	393	409	425	441	457
114	130	146	162	178	194	210	226	242	258	314	330	346	362	378	394	410	426	442	458
115	131	147	163	179	195	211	227	243	259	315	331	347	363	379	395	411	427	443	459
116	132	148	164	180	196	212	228	244	260	316	332	348	364	380	396	412	428	444	460

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Any other comment? _____

ert Gas/Airmixer for accurately premixing gas/air mixtures of any commercial gas — manufactured, natural, mixed, propane or butane — required for (1) automatic brazing and soldering operations where accurate heat control is required; (2) flame hardening where highly concentrated heat input is required; (3) furnaces requiring high rate of heat input of extremely close temperature control; and (4) atmosphere units for furnishing accurately controlled inert gas. The G.A.S. ZigZag Burner for fast localized heating is shown together with burner capacities chart. G.A.S. heating units for flame heat treating, silver soldering, soft soldering, brazing and annealing are pictorially shown together with brief description of the equipment and application-use.

Circle No. 106 on Reader Service Card.

BALLASTS FOR OUTDOOR APPLICATIONS

Six-page publication GEA-7119A contains tables of prices and data on General Electric Co.'s full line of fluorescent lamp ballasts for outdoor applications. Obsolete-replacement and cross reference information as well as wiring diagrams are included.

Circle No. 107 on Reader Service Card.

FINISHING EQUIPMENT

Murray-Way Corp. has made available literature describing their complete line of standardized finishing equipment. Included are descriptions of all of their equipment including grinding, polishing, and buffing machines.

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ROLL FORMING VINYL COATED METAL

Techniques developed by Roll Formed Products Co. permit the firm to roll form all normal shapes from vinyl clad metals. Punching and notching operations can be performed without marring the vinyl finishes. Shapes are available with smooth or textured finishes in most colors, in shapes of your design as well as lockseam and butt seam tubing; angles, channels and T-sections. Bulletin 760 describes the roll forming technique, and shows more than 200 representative cross sections of existing shapes in actual size.

Circle No. 109 on Reader Service Card.

TORQUE-TENSION MANUAL FOR LOCKNUTS

New 18-page ESNA Design Manual No. 6101 available from Elastic Stop Nut Corp. of America includes twelve tables listing specific recommended installation torque values for thin and standard height UNC and UNF hex-type Elastic Stop nuts. It discusses factors to be considered in selecting a tightening torque; also the effects of the use of lubricants. Additional data includes tables of tensile stress areas and tables of bolt strengths.

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NATIONAL TOTAL-MARKET AUDIT

A twelve-page booklet by The National Total-Market Audit, Inc., Div. of Audits and Surveys Co., Inc., describes a continuous nationwide audit of sales, inventories, purchases and distribution of a product in all types of retail outlets. Methods indicated as applicable to many types of consumer products, including appliances.

Circle No. 111 on Reader Service Card.

PRECISION SWITCHES

A new 20-page catalog covering a representative selection of products from the complete Micro Switch line of precision switches for industrial, commercial, data processing, and other applications, has been announced by Micro Switch. Designated Catalog 104, it has photos and condensed descriptions of over 200 items, including miniature switches, special purpose switches, electronic switch-circuit assemblies, lighted pushbutton switches, toggle switches, limit switches, proximity switches and mercury switches.

Circle No. 112 on Reader Service Card.

FLOWCOATING PORCELAIN ENAMEL

Technical Bulletin No. 199 published by Pemco Corp. examines the possibilities of hand flowcoating porcelain enamel groundcoat to certain appliance parts. Conclusions reached are that this method is practical for departments where automatic flowcoating equipment is not economically feasible.

In addition to reviewing savings in labor and material, the bulletin tells how to construct hand flowcoating equipment from easily obtainable materials. Scale drawings are included.

Circle No. 113 on Reader Service Card.

MECHANICAL CONVEYOR CATALOG

A new vibratory mechanical conveyor catalog section has been released by Syntron Co. Containing eight pages, it is fully illustrated and offers complete data, descriptions and specifications of the company's light, medium and heavy tonnage mechanical conveyors.

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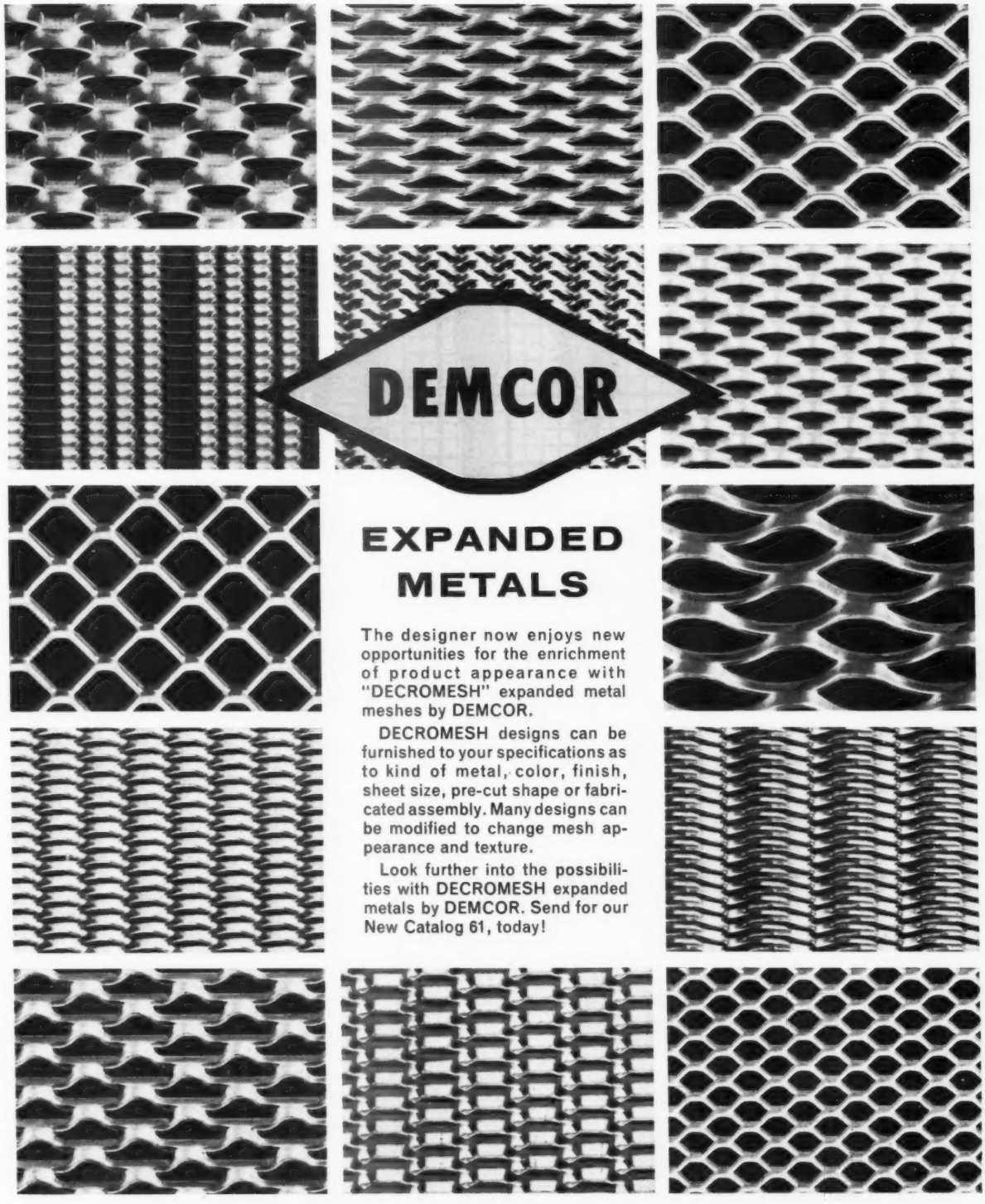
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The designer now enjoys new opportunities for the enrichment of product appearance with "DECROMESH" expanded metal meshes by DEMCOR.

DECROMESH designs can be furnished to your specifications as to kind of metal, color, finish, sheet size, pre-cut shape or fabricated assembly. Many designs can be modified to change mesh appearance and texture.

Look further into the possibilities with DECROMESH expanded metals by DEMCOR. Send for our New Catalog 61, today!

DEMCOR

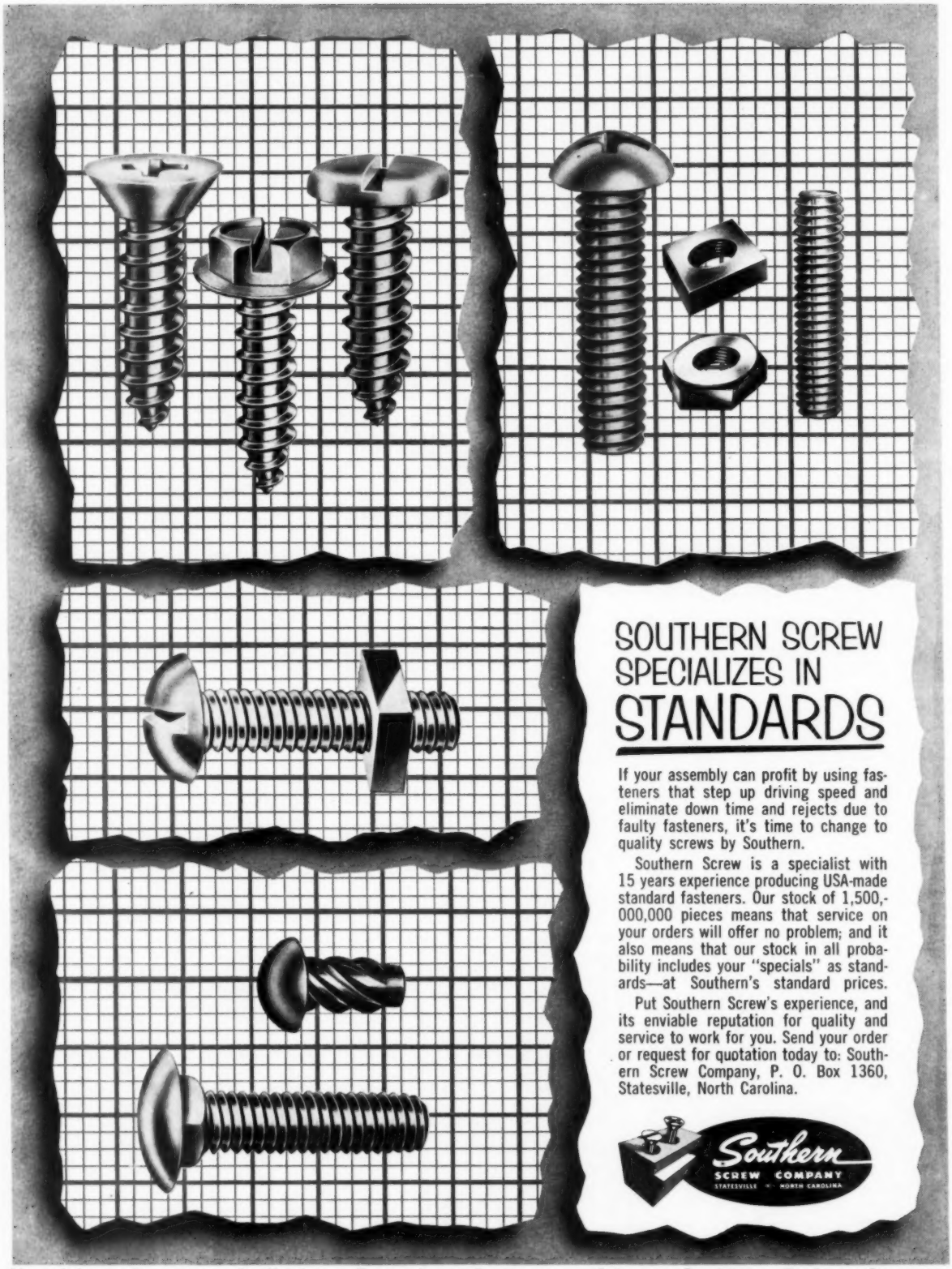
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SOUTHERN SCREW SPECIALIZES IN STANDARDS

If your assembly can profit by using fasteners that step up driving speed and eliminate down time and rejects due to faulty fasteners, it's time to change to quality screws by Southern.

Southern Screw is a specialist with 15 years experience producing USA-made standard fasteners. Our stock of 1,500,000,000 pieces means that service on your orders will offer no problem; and it also means that our stock in all probability includes your "specials" as standards—at Southern's standard prices.

Put Southern Screw's experience, and its enviable reputation for quality and service to work for you. Send your order or request for quotation today to: Southern Screw Company, P. O. Box 1360, Statesville, North Carolina.

Southern SCREW COMPANY STATESVILLE • NORTH CAROLINA

Machine Screws & Nuts • Tapping Screws • Stove Bolts • Drive Screws
Carriage Bolts • Continuous Threaded Studs • Wood Screws

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Circle No. 359 on Reader Service Card.



PMI President Marion A. Sherwood welcomes members at first session of Spring Technical Meeting. Others at speakers' table are (from left) Jefferson Keith, managing director of PMI, Orlando E. Panfile, who discussed "Quality Control Can Save Money," and Robert Chamillard, chairman of the session.



Keith (right) and James D. Oviatt, chairman of PMI's Safety Committee, display plaque which was awarded to 31 stamping companies because of their safety record in 1960.

Cost reduction ideas dominate 12th PMI technical conference

AN MPM STAFF REPORT

THE PROFIT SQUEEZE is on in many industries as costs rise and foreign competition becomes more formidable. The pressed metal industry has felt the effects of a dwindling profit margin and the Pressed Metal Institute, at its recent Spring Technical Meeting, set out to do something about it.

The theme of the New York meeting, which was the 12th annual affair, was "Technical Ideas for Cost Reduction." Several areas were targets of the cost-saving ideas, including quality control, die design, press controls and pre-stretching.

Redesign award

Along with reducing costs, PMI members are also concerned with increasing business. To stimulate this activity, the organization annually presents the John Woodman Higgins Redesign Award to a person in the industry who comes up with the best idea to convert a part to a metal stamping.

This year's award went to Emil Loeffel, tool engineer at H. K. Metalcraft Mfg. Co., New York City. The award-winning redesign involved a small steel sound nut only $\frac{3}{8}$ in. in diameter. It could have been purchased as a screw machine product at a cost of $12 per thousand, Loeffel said, but his two-row progressive die turns out the nuts at a cost of $1.75 per thousand.

Because the side wall is only .080-in. high, the parts are blanked and the blank returned into the .040-in. strip. Two additional stations serve to form the cup and strike a small radius on the outside while piercing the bottom. In these two stations the strip rides on two special pins, raising it over the die face so the cup slides along in its hole to the end of the die.

A special award was given to Samuel Jacobowitz, manager of the tool and stamping division of Welbilt Corp., Maspeth, N. J. His design is a one-piece electric range top with four wells and annular rings. Usual construction is to provide a pierced top with a roll-formed ring, clips around the hole, and a sep-



C. Lester Sears explains "Driving Gear Of Safety," which was part of his firm's successful program to reduce shop accidents.

MPM PHOTOS

"Reducing Costs With Devices And Controls For Automatic Press Operation," was the subject of this panel, which included (from left) William Gluesenkamp, Robert Hoefler, Robert Jordan, and Stanley Huffman, moderator.





Well-attended session hears Stanley Cope give hints on "Cutting Costs With Die Tricks."

arate stamped bowl. The one-piece construction saves the cost of four rings and four bowls.

Quality control principles

The first technical session of the meeting was devoted to quality control, and PMI brought in Orlando E. Panfile, manager of quality control, Tung-Sol Electric, Inc., to discuss the subject. Since most quality control principles apply to a wide variety of industry, Panfile described some of the proven methods and aims of quality control programs.

He stressed that many companies which do not have comprehensive quality control programs are paying for such programs through excess scrap and rejects.

The key to a workable, dependable quality control system in a high-production operation is an accurate sampling technique, he said. Also, this sampling must be relied on, and not merely be used as a tool "to prove what you want to prove."

"Quality control can make a definite contribution to the profit picture," he concluded.

Die tricks

Stanley R. Cope, president of Acme School of Die Design Engineering and a nationally known die design consultant, continued the cost-cutting theme with his presentation, "Cutting Costs with Die Tricks."

He said that many of the problems encountered in die design are traced to an attempt to hurry the designer in his work. Cope prefaced a major portion of his talk with the statement: "I am a miser on stock." He then explained how many "kinks," as he describes them, can be employed to conserve stock on stamped parts.

To illustrate most of his points, Cope showed slides of drawings which he had prepared as the result of experience in various plants.

When called in on jobs to investigate the efficiency of press operations, Cope explained that stock wasting is the thing he looks for first, followed by smoothness of die operation, how the parts are removed from dies, and whether there is the possibility of using air ejection equipment to improve safety and efficiency.

He commended one firm for their policy of building air lines and valves for air ejection equipment into all new dies, thus simplifying the use of air ejection.

Safe stamping

Highlight of one of the meeting luncheons was the presentation of PMI's safety awards by James R. Oviatt, chairman of the association's safety committee and president of D. C. Oviatt Co., Cleveland. The 31 companies which received awards for their 1960 safety performance recorded a total of 15,042,672 manhours of work during the year. Only six lost-time accidents occurred during the period. This represented a 50 percent reduction in the lost-time accident rate over the previous year.

The session following the luncheon continued the theme of safety, which has an indirect but measurable effect on the profit margin. C. Lester Sears, production foreman of Larson Tool & Stamping Co., Attleboro, Mass., described how his firm had planned and carried out a successful program for drastically reducing plant accidents.

He made it clear that cost reduction was not the sole purpose of the program — the element of human suffering cannot be ignored.

The program consisted of two basic elements: strict enforcement and liberal rewards for good performance. Safety committees, regular shop inspections, careful recording procedures and contests of various types were features of the successful program. Results? Virtual elimination of serious injuries and a healthly cut in insurance premiums.

Lower costs with automatic devices

A panel of four men from the press and related equipment industry outlined some of the ways metal stampers could reduce costs through the use of automatic devices.

Robert Hoefler, assistant sales manager of Verson Allsteel Press Co., Chicago, discussed the application of tonnage limiting and indicating devices to mechanical presses.

Robert Jordan, chief electrical engineer of Minster Machine Co., Minster, Ohio, dealt with electrical devices which can be used to improve press performance.

William Gluesenkamp, West Coast sales manager of Wintress Controls Div., Industrionics Controls, Inc., detailed the operation of mechanisms which automatically stop the operation of automatic presses, and described several cases where the shutoff devices had prevented die damage.

Moderator Stanley E. Huffman, sales manager, press division, E. W. Bliss Co., Hastings, Mich., showed a movie on highly automated can production.

A final talk at the meeting, by Jack Frank, general sales manager, The Cyril Bath Co., Solon, Ohio, covered savings in die and material costs through the technique of pre-stretching. MPM

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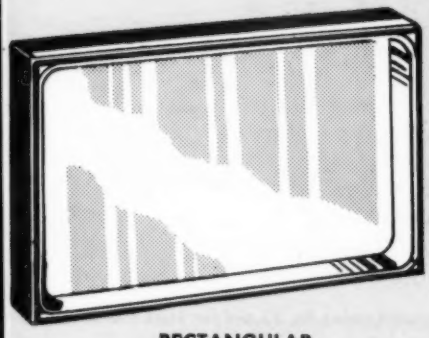
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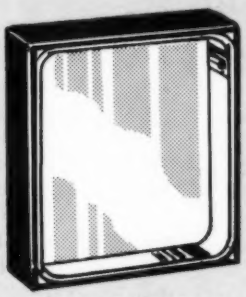


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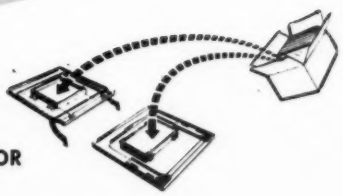
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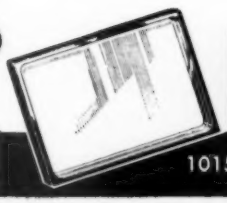
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A look at thermosetting acrylic finishes

AN MPM STAFF FEATURE

THERMOSETTING ACRYLIC FINISHES, one of the latest developments in organic coatings for appliances and other metal products, offer such a variety of properties and applications that any general statements could be misleading, if not inaccurate.

The growing importance of this material in the organic finishing industry cannot be disputed. Most of the paint manufacturers who do not now offer a thermosetting acrylic finish have coatings of this type in various stages of development. Although it is difficult to pinpoint the current volume of thermosetting acrylic usage, it seems safe to say that the future will see increased use of the coating.

Why? Because it appears that thermosetting acrylic resins, when combined with other resins and chemicals, produce improved finishes as far as certain properties are concerned. Among these areas of improvement claimed by producers of the acrylics are color stability, hardness, mar resistance, corrosion resistance and detergent resistance.

What is a thermosetting acrylic finish? It is an organic finish with a thermosetting acrylic resin as the emulsion vehicle. It differs from a conventional baking enamel in its "thermosetting" nature — a chemical change in the coating occurs in the baking operation, whereas other baking enamels are merely "dried" in the bake oven.

Formulations based on a thermosetting acrylic resin are catalyzed by a modifier such as epon, acrylic, amine, amid, acid or urea. These catalysts normally constitute no more than ten percent of the vehicle solids.

Should this class of organic finish be taken as the last word in industrial coatings? Apparently not. When properly formulated to suit a specific application, thermosetting acrylics seem to give excellent results. Difficulty would probably be encountered if one finish was relied on "to be all things to all products." In this connection, it is interesting to note that one chemical coating manufacturer says thermosetting acrylics have received a "black eye" in some quarters because the finishes were used in jobs for which they were not specifically suited.

It is seldom possible to build into one acrylic resin molecule top performance in all the properties previously mentioned. A compromise is often necessary. This compromise may take the form of striving for the best possible performance in all properties to achieve an acceptable balance. An alternative is to use a finish which offers top performance in the important properties while sacrificing others.

The latter approach was spelled out to MPM by an authority in the organic finishing field. He explained that certain acrylic resins are extremely durable for outdoor exposure. However, when these resins are modified to yield other properties, it is likely that the degree of outdoor durability will be considerably reduced.

The potential of thermosetting acrylic finishes appears promising for manufacturers of appliances and other fabricated metal products. As with most relatively new developments, there have and probably will continue to be "backward steps" caused by haste or inexperience. On the other hand, paint manufacturers and suppliers of raw materials are not simply sitting back and waiting for orders to come in. Knowledge gained through laboratory work and field studies is constantly being applied to further improve this comparative newcomer on the organic coating scene.

In order to get a picture of what the chemical coating industry is offering in the way of thermosetting acrylic finishes, MPM contacted the producers and asked for information on their products. This information is summarized here to aid MPM readers in evaluating the material.

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duracron . . . PITTSBURGH PLATE GLASS COMPANY

IN 1956 THE PAINT DIV. of Pittsburgh Plate Glass Co. introduced what it called "the first extensive commercially used industrial coating based on its thermosetting acrylic resins." Pittsburgh Plate's Duracron is based on a type of thermosetting resin which has as its crosslinking component an unsaturated amide.

The initial products offered by the company were known as the Duracron Series 100. These possessed good exterior durability, "and when compared to alkyd-melamine enamels normally used on home appliances, revealed substantial improvement in gloss retention on overbake, chemical and detergent resistance, humidity and salt spray resistance, steam resistance, impact resistance, hardness and mar resistance."

According to Pittsburgh Plate, Duracron enamels have outstanding adhesion to properly prepared surfaces and results show that one coat gives the protection of two coats of regular enamel.

Following the introduction of Duracron Series 100 for appliances and other industrial applications, company technicians discovered that a modification of the resin to produce a much more flexible product could be made for application in the can coating and lithography industries. "This wide variation in properties by changing the composition of the basic resin is one of the outstanding features of the thermosetting resin development," the company reports.

Approximately a year after the announcement of the initial Duracron series, the company introduced its Duracron 200 and 300 finishes. Duracron 200 is a more chemically resistant type coating than Duracron 100, and exhibits better salt spray and detergent resistance. It is, however, less flexible than Duracron 100. Pittsburgh Plate recommends it for home laundry equipment.

Duracron 300 is the company's most economical type, but it does not possess the characteristics equal to 100 and 200 in hardness, stain resistance and chemical resistance. The company does claim, however, that the finish possesses superior qualities to conventional alkyd-amine finishes.

A recent development by Pittsburgh Plate is a one-coat thermosetting acrylic finish designed for application to aluminum siding. The company says this finish combines in a single coating "exceptional" qualities of adhesion, flexibility, chemical resistance, durability, color retention, and ease of application.

The coating can be furnished in a complete range of colors, "at cost comparable to other coatings," and applied by roller coating or spraying.

TO NEXT PAGE →

vitrilan . . . INTERCHEMICAL CORPORATION

INTERCHEMICAL CORP., Finishes Div., offers a series of thermosetting acrylic enamels under the trade name Vitrilan. Each member of the series is designed for a specific end use.

One of the grades is said to excel in soap and detergent resistance and is recommended for use on home laundry equipment. Another ranks high in heat resistance and is suggested for ranges and other heating appliances which operate at temperatures up to 400 F. Still another, because of its outdoor durability, is sold to manufacturers of aluminum awnings and siding.

Finally there is a low-cost version which Interchemical says can be sold competitively with urea and melamine-alkyd enamels but reportedly outperforms the latter in such properties as resistance to salt spray, stains and abrasion. The company says test data indicates that the low-cost Vitrilan enamel is superior to some two-coat systems comprising a primer and a urea-alkyd topcoat. According to the company, the low-cost version is priced in a range that permits its use as a general purpose industrial enamel.

Vitrilan enamels are heteropolymers of various acrylic monomers, and can be tailored to yield a wide range of physical properties. The material is applied by conventional methods, including both disc and bell-type electrostatic spray.

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armorcote . . . COOK PAINT & VARNISH COMPANY

COOK'S CONTRIBUTION to the currently available lineup of thermosetting acrylic finishes is designated Armorcote Acrylic Enamel.

The company recommends Armorcote for refrigerators (liners and outer shells), laundry equipment (inside and outside surfaces), and home freezers (liners and cabinets).

Comparative tests run by the company to check on film properties of Armorcote as compared to properties of a typical refrigerator finish and the company's "universal appliance finish" (epoxy ester primer baked separately and top coated with 830 line enamel), revealed the following characteristics of Armorcote:

The thermosetting acrylic was superior in "gloss and appearance," had better stain resistance (especially in the iodine test), and scored highest in detergent resistance (as measured for blistering, softening and discoloration). The company points out that perfect performance in detergent tests beyond 1000 hours has been obtained with the thermosetting enamel where high-quality surface preparation had been carried out.

In flexibility tests, Armorcote outscored the other two enamels in impact resistance and "coin scratch adhesion to metal," but fell below in bend tests.

Other characteristics in which the finish is said to excel include grease resistance, alkali resistance, and resistance to yellowing. The enamel is resistant to such solvents as mineral spirits, alcohol and gasoline, but is attacked by aromatic solvents, esters and ketones.

According to the company, coverage obtainable with Armorcote Acrylic Enamel is comparable to conventional appliance finishing systems. Assuming no overspray losses, the material has a theoretical coverage of 480 sq ft per gallon when applied at the recommended 1.25 mils dry film thickness.

To cover the same area with a conventional refrigerator system, having .8 mil of a flash primer and 1.1 mils of 830 line white enamel, requires .5 gal. of primer and .6 gal. of enamel, for a total of 1.1 gal. of material.

Cook says the material is designed for application over steel which is treated with a good phosphating process. A micro-crystalline phosphate coating in the range of 60 to 120 mg per sq ft is recommended. The company warns that excessive phosphate coating thickness or very coarse crystal structure gives poor adhesion and flexibility.

Anodized aluminum is described as an excellent substrate for Armorcote.

The finish is readily reduced by aromatic hydrocarbon solvents or several commercially available solvents. Amount and specific type of reducer depends on application conditions and equipment.

Cook reports that Armorcote can be applied by conventional methods, including flow coating, cold and hot spray, and electrostatic spray.

Flow coating: Armorcote can be applied as a two-material system in installations where flow coating is used or where a customer desires to apply a prime coat by this method.

The primer is essentially an untinted thermosetting acrylic enamel designed to be applied by flow coating as a flash prime portion of the total film, with a .5 mil dry film thickness being the normal amount applied by this method. After the solvent drain off chamber and 10 to 20 minutes of dry air, spray application of .8 mil of Armorcote, which has been tinted to the user's specification, completes the system. A single bake follows.

Cold spray: The enamel can be applied with any standard cold spray equipment, whether manual or automatic, by reducing it with an aromatic solvent. Fluid viscosity of 23 seconds (No. 2 Zahn cup) with enough pressure to give enamel delivery at the gun of 12 to 18 oz. per minute, and atomizing air pressure of 45-65 lbs, is said to return good results.

Hot spray: In hot spray applications a minor modification of the reduction solvent is required. The company makes recommendations for individual applications.

Recommended dry film thickness of 1.25 to 1.4 mils are said to provide good hiding and uniform appearance over minor substrate texture variations.

In normal installations where Armorcote is applied by a two-station spray line (flash coat followed by a full finish coat), the flash time between the first and second applications should be two to three minutes. The final finish, the company suggests, should be given a bake equivalent to at least 30 minutes at 300 F metal temperature. Oven time decreases as metal temperature is raised.

Underbaking, the company points out, will cause a brittle film which shows poor adhesion and flexibility. Overbake resistance, on the other hand, is said to be excellent. Only a slight color change occurs after an overbake of 60 minutes at 400 F.

acropon . . . DESOTO CHEMICAL COATINGS, INC.

DeSoto Chemical stresses the advantage of using their thermosetting acrylic enamel, Acropon, as a one-coat finish. Reduced labor costs, shorter curing cycles and increased rates of production are the favorable factors mentioned.

The use of a one-coat system, the company points out, compensates for the slightly higher cost per gallon of the thermosetting acrylic. Whereas a typical alkyd amine is applied in thicknesses of 1.5 mils, the thermosetting acrylic provides adequate coverage at .8 to 1.0 mil.

Another matter relative to cost is the quantity of the material being used. The quantity is expected to increase and bring with it a gradual reduction in cost.

Appearance-wise, DeSoto says its thermosetting acrylic has a "depth of finish" and "lack of fog" which are superior to conventional alkyd-type finishes. The resin's unique optical properties, which are claimed to be like no other coating resin, are responsible for the appearance difference.

To demonstrate the acrylic polymer's resistance to color differences caused by variations in production oven temperatures and baking cycles, DeSoto coated panels with a conventional alkyd-amine finish and others with the one-coat acrylic. The panels were baked initially for 20 minutes at 325 F. The panels were cut and sections overbaked at temperatures ranging up to 500 F. DeSoto reports that the alkyd-based finish did not withstand these temperatures without degrading, yellowing and losing gloss. The thermosetting acrylic, on the other hand, retained its original gloss and exhibited only slight yellowing at the higher temperatures.

Similar comparative superiority is claimed in the areas of corrosion resistance, hardness retention, grease and stain resistance. The company reports that the thermosetting acrylic is not softened or in any way affected by hot grease even after several hundred hours immersion. This resistance is attributed to the dense, closely bound film which is formed by the acrylic polymer.

The company stresses that in the appliance field the mechanical resistance properties of finishes must be balanced according to the specific job to be done. Also, it is frequently difficult to say which property — hardness, flexibility, abrasion resistance or impact resistance — is the most important. On this matter DeSoto says: "The thermosetting acrylics have provided us with an excellent balance of mechanical properties, and few compromises are necessary even under the toughest conditions."

The abrasion resistance properties of the thermosetting acrylics indicate that these films become uniformly cured throughout the depth of the film, the company says. There is no tendency toward "surface cure" or "case hardening," which produces a soft under-film that can readily be abraded once the surface skin is broken.

DeSoto says solvents used in reduction in existing systems can also be used in the acrylic formulation. Application can be made with normal hand spray or automatic electrostatic methods.

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poly-tex 913 . . . JONES-DABNEY COMPANY

Poly-Tex 913 is an acrylic copolymer resin offered by Jones-Dabney. The material is said to provide vastly increased flexibility over Poly-Tex 910, which was previously available from this company. In other properties, such as color, salt spray, caustic and detergent resistance, Poly-Tex 913 is equivalent to Poly-Tex 910. In stain resistance, Poly-Tex 910 is said to be marginally superior.

As with Poly-Tex 910, it is necessary to use Poly-Link 980, a curing resin, with Poly-Tex 913.

While the company's work has been restricted mainly to the appliance field, company spokesmen feel the coating is not restricted to this industry, and they believe the material is suited to any application requiring the above properties.

Jones-Dabney reports weatherometer exposures using conventional alkyd-amino standards as controls give Poly-Tex 910 and 913 formulations a wide margin in color and gloss retention, resistance to chalking without checking, and other desirable characteristics.

Coatings based on a blend of Poly-Tex 913 and Poly-Link 980, in a ratio of approximately 78 to 22 per cent, on a solids basis, require a baking schedule of 30 minutes at 360 F to obtain the full potential offered by this acrylic copolymer. A minimum baking schedule of 30 minutes at 325 F may be used if the maximum in resistance and performance is not demanded. Even at this level such films are said to be superior to conventional alkyd-amino resin finishes.

A temperature below 325 F does not sufficiently cure this type of coating and the resistance properties are impaired. Consequently, the use of Poly-Tex 913 with Poly-Link 980 on schedules of less than 30 minutes at 325 F is not recommended.

For spray applications, particularly, combinations of relatively high boiling aromatic naphtha and butanol, with some high boiling alcohols, insure good film deposition. Normal precautions must be taken when films as heavy as 1½ mils are applied, to prevent solvent trapping and to insure proper flow.

Sprayed films should be given a flash time of approximately ten minutes. Film thicknesses of two mils or more may result in pinholing or solvent popping unless particular care is exercised. The company says a gradual rise in oven temperature is one of the best means of insuring trouble-free finishes, and particularly in the case of heavy films.

Jones-Dabney says that formulations based on blends of Poly-Tex 913 and Poly-Link 980 provide exceptionally good gloss at pigmentation levels as high as 1:1 pigment to vehicle solids, by weight. This combination of high gloss and high hiding, coupled with high resistance, make it unnecessary to use more than 1½ mils dry film thickness.

It is suggested that the common practice of using small quantities of mar-proofing agents normally used in baking enamels be followed to provide films with excellent mar and scuff resistance.

Pigment dispersions in Poly-Tex 913 are best accomplished in pebble or ball mills. Cleanliness of milling equipment is important. Blends of Poly-Tex 913 and Poly-Link 980 should not be used with reactive pigments.——MPM

STANDARDIZATION IN APPLIANCE CONTROLS

Part II — Modular Design — One Approach to the Problem

BY *R. L. Heckman* • MANAGER — PRODUCT PLANNING, GENERAL ELECTRIC CO., MORRISON, ILL.

THE HISTORY of the range timer business at General Electric dates back to the 1930's. As described in Part I (April MPM) of this two-part article, one of the main problems of component manufacturers has been the need for careful design changes.

In 1957, when it was ascertained that new product designs were being required at an increasingly rapid rate, a special task force was established to survey the industry and recommend courses of action which would lead to a solution to the problem. The task force surveyed intensively all customers involved and studied all competitive product offerings. The recommendations included a basic design philosophy which ultimately gave birth to a line of range oven timers built on the principle of modular design.

The study revealed that over the years certain specific problems appeared again and again and each time a different solution had been attempted. This yielded the first clue to the modular approach to design.

Specific areas of the timer were designed so that they could provide the variety necessary to serve the market with a highly standardized group of parts. As the design progressed, it became obvious that the total device could be broken down into funtional areas and major component sub-assemblies provided to serve each of the functional areas.

Standardization was further enhanced between functional areas by re-examination of parts and sub-assemblies. The functions involved were: *clock*, *oven timer*, and *interval timer*.

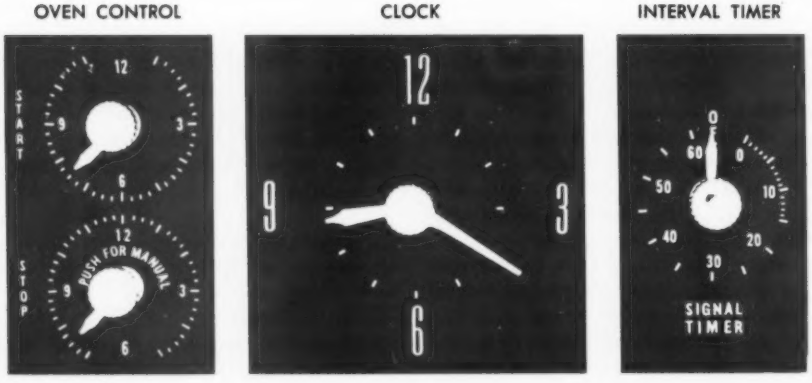
In the "standardized" timer, each of the three functions (clock, oven timer and interval timer) is clearly defined both from an industrial design standpoint and from a mechanism standpoint. Each function has its own setting shaft and knob located within the face area so that there is no confusion as to which shaft controls which function.

The basic planning inherent in this approach yielded standardization of functions which could be assembled in different manners to form various timers. Thus evolved a "building block" format which was suitable for solving the problems of customer variety while maintaining standardization for low cost and high reliability.

The benefits provided by the modular concept are applicable to both customer and supplier. One of the major customer benefits is substantially improved performance and reliability.

The modular concept, in addition to providing standardization among parts and processes, provided a good range of product variety. This helps to satisfy customer-initiated changes and hence *increases the useful life of the product.*

The accompanying illustration serves to show the way the basic timer can be reshaped into several forms to provide a series of upgrading possibilities for the range manufacturers. It also enables the manufacturer to satisfy his inherent desire for change without causing expensive mechanism changes. This results in savings to both supplier and customer and hence to the industry in total.



The modular or "building block" concept of appliance controls offers "individuality and flexibility with standardization." The three functions of a range timer which are illustrated — oven control, clock and interval timer — can be used in several combinations, all fitting the same backsplash opening. Functions are standardized — each has its own setting shaft and knob. Product variety and flexibility are obtained by assembling the functions in different manners, and offering variations in styling to meet manufacturers requirements.

Standardization is a Paradox

COMMENT TO MPM BY DAN JENSEN, PHILCO CORP.

I READ THE FIRST OF YOUR standardization series, and while I feel I have nothing startling to offer on this subject, I will, in compliance with your suggestion, give you a few comments.

Standardization is probably the only subject which has been talked about more than the weather, and about which even less has been done. This is undoubtedly because standardization is a paradox — to accomplish it requires a completely comprehensive viewpoint, tying together the parts; but at the same time each part must be observed individually, with expert attention to detail. It requires dedication to a principle of strict discipline.

In a company where standardization has been casually practiced, there is perhaps no area in which it is more difficult to prove a tangible result before the fact. It must be therefore, largely approached on faith, and practiced several years before its true significance can be measured.

Once the personnel of a company overcomes the *reactionary feeling* that standardization:

fights — change
fights — individuality

that it signifies — compliance — and determines that it requires both overall planning and more detailed study — then, and only then, will the company realize that standardization:

brings — lower component cost
brings — quality
brings — ease of service

Now, being a "fait accompli," the company learns that the best product solutions frequently come from assignments in which the greatest limits are imposed and that these controls are especially important in an industry as saturated as ours.

Two Sides to the Story

The following comments represent the "meat" of a communication from an executive in one of the leading component manufacturing companies serving the appliance and allied industries. For lack of documentation, the author prefers that his thoughts be presented anonymously.

THERE ARE, OF COURSE, INSTANCES where changes are made for a mere face lift, or as the result of an annually occurring habit. I feel sure that you will be able to point out in your editorial comments that the elimination of such changes would be beneficial to the industry and the consumer.

We must realize, however, that oftentimes apparently trifling modifications may be required by significant improvements in the end product. The advent of foam insulation in refrigerators brought about changes in thermostats without affecting their basic functions. It became necessary not only to design smaller or shallower configurations but also to modify details of their mounting arrangements to allow the best utilization of an innovation that led to a substantially improved appliance.

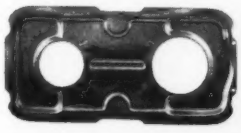
In some cases minor changes are dictated merely by the choice of a new mounting location, which may be beneficial for better utilization of space or more appealing styling. Who could justifiably gainsay the demands of the stylist if it can be shown that he produces esthetic values and contributes to the growth of our gross national product? MPM

Mass Produce These Parts On Your Production Line

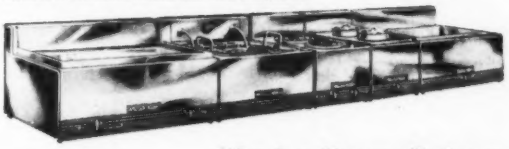
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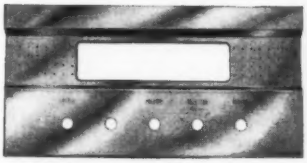




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Ralph Mais (center), company president, inspects prototype of the Grand Seal of Bolivia, with plant superintendent DeLucea (left) and Stojek, foreman of the platemaking department.



The staff artist of the Mais Co. works on key plate for the production of the Seal of the United States.

how silk screen printing was use

Porcelain enamel decorates

On October 4, 1960, a day declared as "Western Hemisphere Day" by New York Governor Rockefeller and Mayor Wagner of New York City, 6th Avenue in Manhattan became "The Avenue of the Americas." Dramatically displayed on street light poles were full-color reproductions of the grand seals of the 22 member nations of the Organization of American States. These permanent plaques, 36 in. in diameter, were reproduced on porcelain enameled steel.

It is reported that a number of sign manufacturers had turned down this assignment for the reproduction of the complicated grand seals in porcelain enamel as not being practical.

After producing a specimen panel, the Ralph G. Mais Silk Screen Printing Co., Seaford, L. I., accepted the challenge for the production of the full color reproduction of the seals, in cooperation with the Municipal Street Sign Co., College Point, L. I. Not having available the necessary furnace facilities, the Mais Co. handled the necessary technical details of application and then arranged with Seaporcel Metals, Inc., and Welbilt Corp. to complete the firing operation.

Enameling a prototype

With a limited background in porcelain enamel, Mr. Mais decided upon a series of tests prior to the completion of a prototype seal representing Bolivia.

First a series of 12 by 12 in., 18-gauge enameling iron samples were fabricated and enameled white. A series of nine different ceramic colors (the maximum required for any single grand seal) were screen printed on the sample plates. Each color was baked or "dried" in an infrared oven at approximately 400 F. By a system of applied horizontal and vertical lines it was possible to check the overprinting values of each color, following the final firing at 1500 F in an enameling furnace.

Then the full size 36 in. plaque was produced and submitted to The Avenue of the Americas Association for approval. Following this the company was awarded the contract to produce 15 double-faced, 36-in. plaques in each of the 22 designs.

Production method

Enameling grade steel was used in 16 gauge for the "production" plaques, and the ceramic colors used were all acid resisting. Both halftone and line techniques were employed.

Photographic and knife-cut stencils were used, and key plates were made with film. Fifty to 60 line halftones were used in the halftone areas. Special jigs were employed and registered with punched holes so that one side could be screen process printed and turned for the printing on the reverse side.

In production, the baking or "drying" of the individual applications required 18 minutes at 400 F. After a short cooling period, the succeeding color was applied and baked, so that all colors (as many as nine) were applied before the single firing for the colors.

Special containers were used to transport the decorated plaques to Seaporcel and Welbilt for the final firing at 1560 F in continuous porcelain enameling furnaces.

The R. G. Mais Co. has been associated with silk screen printing for over 30 years. The company now occupies 7,000 sq ft of plant area, which is equipped with conveyorized baking facilities, a metalworking shop, a carpenter shop, plastic laminating equipment, die cutting equipment, cameras and other photographic equipment.

Normal production includes nameplates, printed circuits, point-of-purchase material, displays, metal decorating specialties, etc.

Following completion of the grand seals as described, the Mais Co. produced a limited number of these pieces for cocktail tables and other specialty items. According to Ralph G. Mais, president, their work for The Avenue of the Americas Association was enthusiastically received. He feels that this concept for producing permanent multi-colored plaques should have a worthwhile future.



Head of the platemaking department prepares color separation stencil for the U. S. Plaque.



Screen printer prepares a silk screen for the application of ceramic color.



Backing sheet is stripped from silk screen stencil.

To simplify a "tough" porcelain enameling assignment

The Avenue of the Americas



Upon completion of the grand seals, the firm produced a limited number of plaques for cocktail tables and other specialty items.



Application of the third color on the U. S. plaque.

Below, left) — Print is inspected for register and coverage. (Below, center) — Printed plaque is placed on conveyor of the infra-red oven for "baking" between color applications. (Below, right) — With solvents removed from colors, the plaques are placed on cooling racks prior to application of succeeding colors.









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RESEARCH AND A FLAME

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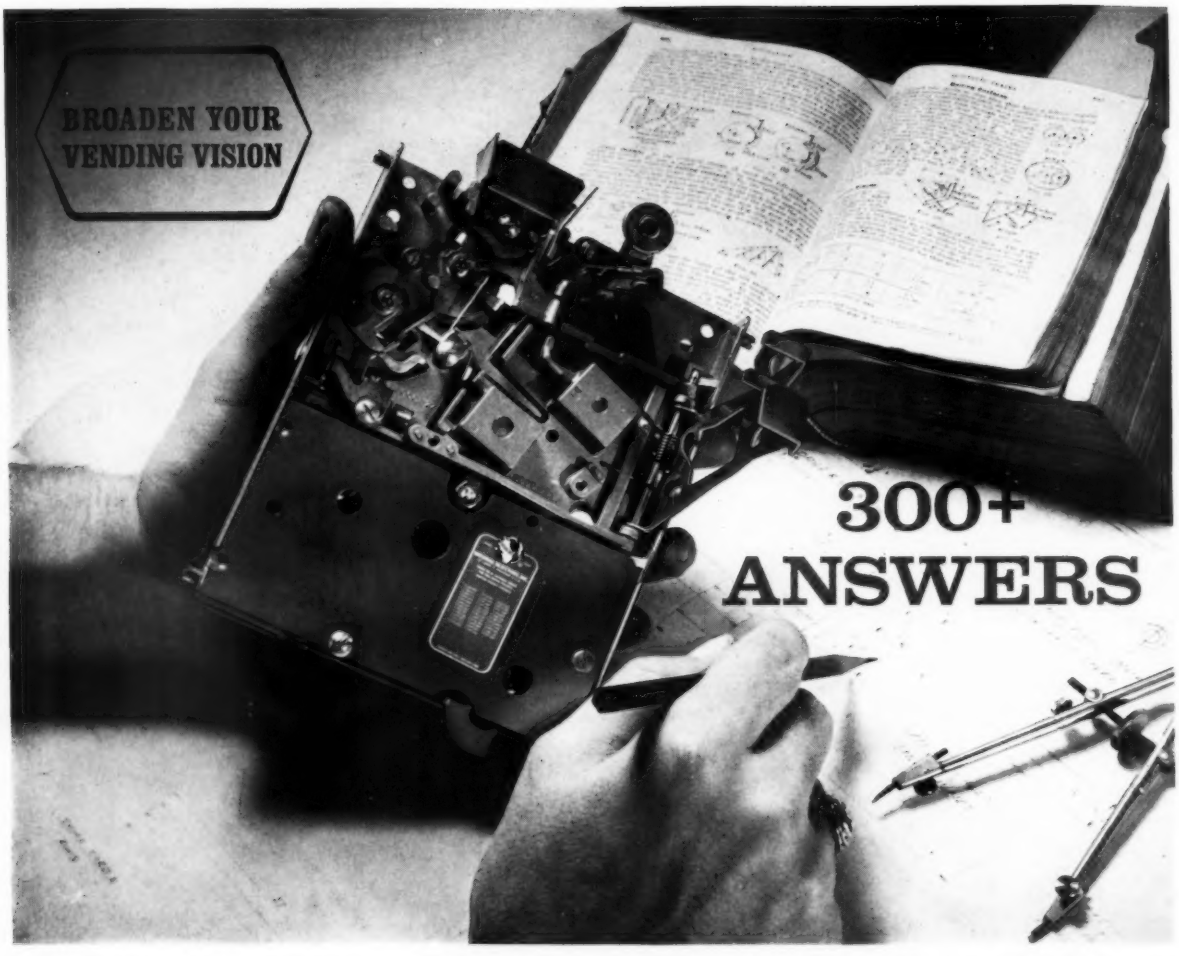
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EDITOR'S NOTE: Coin-operated merchandising equipment gets the spotlight in this issue of MPM in our Fourth Annual Special Section devoted exclusively to the manufacturers of this type of equipment.

MPM started serving this industry at the manufacturing level several years ago, for we felt that automatic merchandising could be considered in the category of a growth industry which could well use an editorial voice at the manufacturer's level.

It has never been our intent to overplay the importance of coin-operated equipment in relation to total volume of production when compared to major home appliances and other high production products, but we have felt and do feel now that the volume is worthy of editorial consideration and that it will continue to grow. This opinion would seem to be shared by analysts and financial people "in the know."

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AUTOMATIC MERCHANDISING – 75 YEARS OF SERVICE

BY *Thomas B. Donahue* • *PRESIDENT, NATIONAL AUTOMATIC MERCHANDISING ASSOCIATION*

IT WILL BE 75 YEARS IN 1961 since the first American patents for vending devices were filed.

To honor these early beginnings of our industry and to recognize the remarkable growth and development of vending's service to the public, the National Automatic Merchandising Association has designated 1961 as the official 75th Anniversary Year of automatic merchandising.



T. B. DONAHUE

The purpose of our year-long observance is to present to the public the achievements, economic role, and future potential of automatic merchandising and to show "How Vending Serves the Public — Automatically."

The year 1961 also happens to be the 25th anniversary of the founding of the National Automatic Merchandising Association. Today it encompasses more than 1300 vending companies, vending machine manufacturers, and suppliers of vendible products and services.

Hero Cstebus, a Grecian high priest, is the legendary inventor of the first known vending device. In 219 B.C., he devised a simple vessel which would dispense holy water upon deposit of a drachma coin.

Vending as we know it today, however, had its real origin in Europe, especially in England.

In the early 1800's a coin-activated tobacco box, relying on the honor system, made its appearance in England.

In 1883 Percival Everitt, an Englishman, invented an "automatic vending apparatus" for the sale of post cards. This device, with improvements, was patented in the United States in 1886 and is said to have led to the first American automatic dispenser of tobacco.

The year 1886 thus truly marked the beginning of vending in the United States.

In 1888 Thomas A. Adams installed his first Tutti-Frutti gum machines on New York's elevated train platforms.

Automatic merchandising hit its stride in the 1920's with the appearance of the first cigarette vending machines.

The fledgling industry grew steadily, but its mainstay remained in the sale of cigarettes, candy, gum and nuts. New possibilities were added with the successful vending of soft drinks, milk and ice cream.

It was in the years after World War II that American automatic merchandising became the dynamic service industry which it is today.

In 1946 the first successful coffee vender was developed.

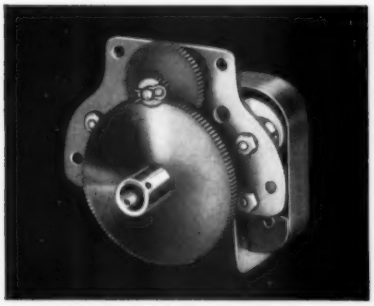
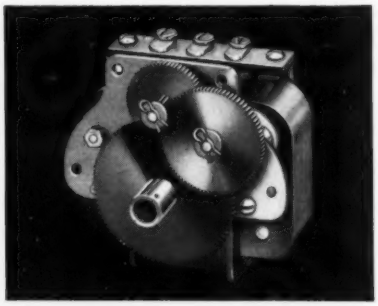
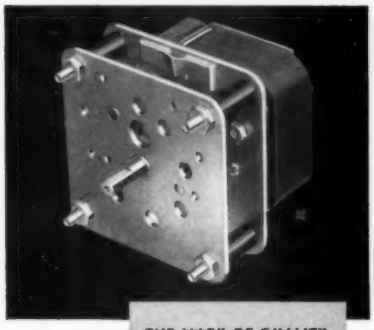
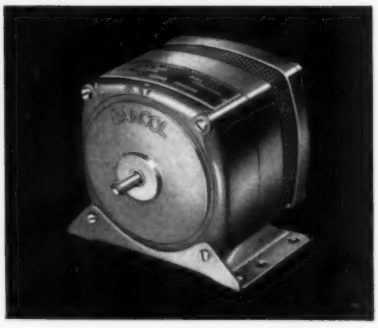
Complete refreshment and food service was being tried by managers of large plants.

From such long-established conveniences as automatic parcel lockers and weighing machines, we have today progressed to vending machines for travel insurance, coin-operated laundries, parking lots and even token venders.

Keeping step with the pushbutton age, automatic merchandising now even offers machines which change bills into coins. This development alone will eventually bring great expansion of automatic services — grocery vending, ticket vending and automatic selling of soft goods are just a few of the possibilities which lie ahead.

Machine manufacturers and the vending specialist companies who operate the machines continue to progress in their basic purpose: "Serving the Public — Automatically."

High-quality, long-life Barber-Colman geared motors give you high torque, positive starting... wide choice for your vending machines

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AUTOMATIC MERCHANDISING BRIEFS

NO RECESSION HERE. The Commerce Department reports that manufacturers' sales of automatic vending machines in 1960 are estimated at $135 million, a six percent gain over the $127 million in 1959. If the current trend continues through 1961, manufacturers' sales are expected to reach a new high, the department says.

VENDING TRENDS. The automatic merchandising industry was busy during 1960 in more ways than one. Some of the general trends that developed include: an inclination toward integration in the industry; technical developments to handle products not previously adaptable to older vending machines; and the registration and sale of common stock to the public by several large, closely held vending companies.

EXPORT MARKET. A look at exports shows that during the first 11 months of last year 24,927 vending units were shipped to foreign lands. This equipment had a value of $3.1 million. Canada, West Germany, the United Kingdom and Australia were top customers. During the same period in 1959, 38,737 units were shipped, but total value was only $2.5 million.

COIN-OP AMUSEMENT CENTER. Automatic Concessions Corp. is offering a miniature amusement center consisting of childrens' rides, game machines, snack bar — all coin operated. Called the Fun Fair package, the amusement center occupies an area of 5000 to 6000 sq ft, and is being offered to food chains, discount stores, bowling alleys, etc. The idea is for the kids to play while the parents go about their business.

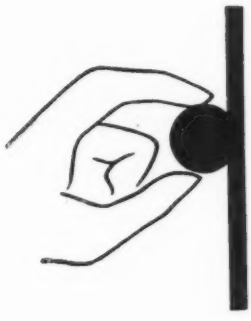
NAMA CONVENTION. The National Automatic Merchandising Association's annual convention and exhibit will be held October 28-31 in Chicago's new McCormick Place exposition hall. The show will be preceded by the International Vending Symposium.



A card file is kept on the past service needs of thousands of customers, but the need for even greater efficiency has resulted in the use of automation for most of the functions of this operation.



A multitude of parts are kept on hand at all Ven-Par branch offices, insuring rapid service for customers. Entire operation is designed to have the machines in operating condition with a minimum of delay.



Vendo gives improved service with new Ven-Par Co.

A 79,000-SQ-FT BUILDING designed to house the International Ven-Par Co., a new division of The Vendo Co., was recently completed on the 29-acre Vendo plant site in Kansas City, Mo.

The insulated steel structure is an extension of a recently built 68,000-sq-ft building which was built for additional warehouse and manufacturing space.

The International Ven-Par Co. was created so that Vendo "could give better and more personalized service to vending customers."

Included in the new building are 5600-sq-ft of air conditioned office space, 50,000-sq-ft for repairs, replacement and storage of parts, and training and conference rooms.

According to C. Whitney Miller, general manager of the new operation, "For the first time in the vending industry, we can now offer our customers a modern and up-to-date parts, training and service system which is designed to help them solve their problems and strengthen their own business organizations. . ."

A building was recently completed in Los Angeles which is now the home of the Ven-Par Co. branch serving 11 western states. A Chicago branch, serving a seven-state area, is now operating, as is a New York branch, which serves a five-state area around the Great Lakes and the North Atlantic Seaboard States.

It is anticipated that by late 1961 or early 1962 other branch offices will be open in Atlanta and Dallas.

An efficient method of inventory control for the nationwide service program has been devised utilizing the IBM electronic computer located at the Kansas City Vendo plant. Inventory of all parts, orders and stock on hand is controlled completely by automation. Through the automatic computer the company is able to determine in a moment the quantity and kind of parts at any of the branches.

The Vendo Co.'s IBM "Ramac" computer is utilized to keep a full account on all customers. Also, it keeps tab on all parts, orders and stock on hand. With the computer's aid in forecasting, the company is able to anticipate future orders and maintain adequate inventories.





The International Ven-Par Co. maintains a department that designs, compiles and publishes a variety of parts, maintenance and repair manuals for servicemen and customers.



(Right) — A new machine has been installed which packages parts for shipping and storage in "custom tailored" polyethylene bags. About 7,000 parts and conversion kits will be sealed in the water and dirt-proof packages.



(Left) — Parts needing service are shipped to Ven-Par Co. In the case of refrigeration units such as the one shown, the customer will first notify Ven-Par. A refrigeration unit will be sent to him and he will return his unit in the shipping crate. In this picture, a broken tube on a refrigeration unit is being studied.

Training sessions are designed to help both customers, Ven-Par Co. and Vendo people. A company representative demonstrates how one of the new Vendo Visi-Vendo machines operates.

which keep a substantial inventory of vending machine parts and accessories in stock.

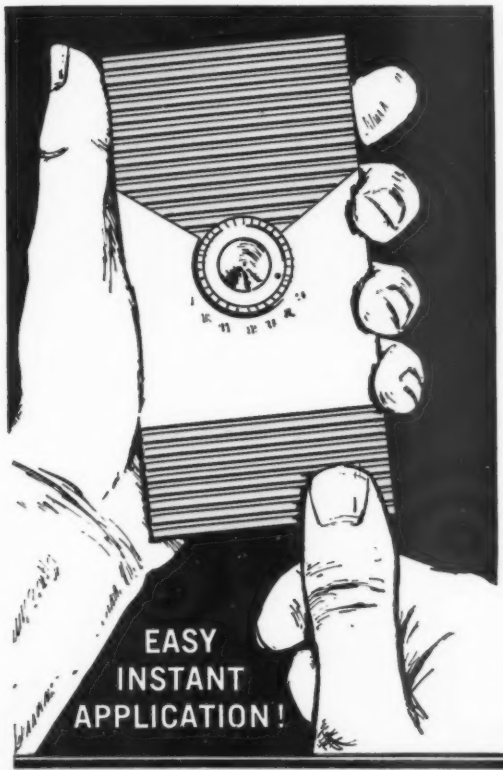
In this way it will be possible to keep an adequate supply of necessary parts ready at all times for the orders of the operators and bottlers.

Other supplies, such as vending containers, lubricants, special tools, signs and unification background kits are available at the centrally located branches.

At the Kansas City office, and also the branch offices, complete repair shops are maintained with a staff of trained vending machine repairmen. Another important service offered by the Ven-Par Co. branches is training schools for customers where the latest techniques of vending machine operation are taught.

Thomas A. Buckley, Vendo senior vice president in charge of sales and marketing, predicts that the creation of International Ven-Par will be a boon to vending operators and bottlers. "Automatic merchandising has grown to be a giant industry," he said. "Through the years it has become complex and has developed many needs. Special efforts must be made to satisfy these needs." **MPM**

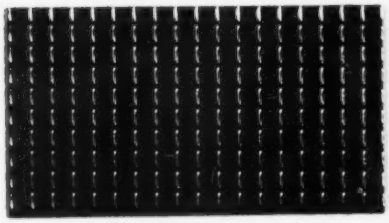




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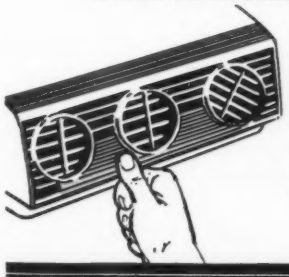
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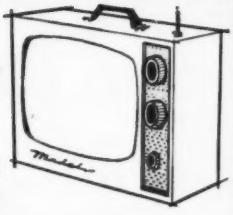
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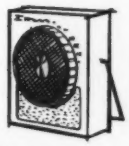
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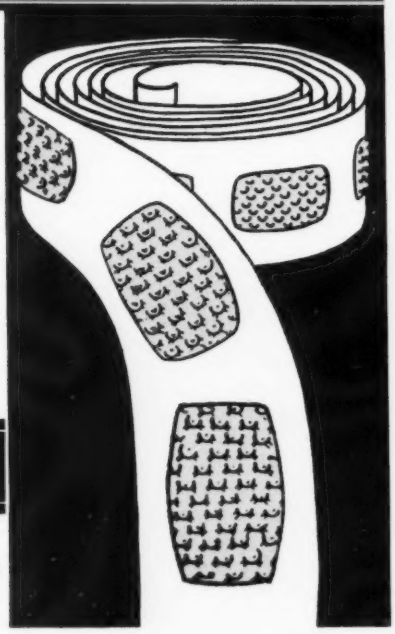
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Trend in coin-op washing and cleaning: package installations

IN RECENT MONTHS the coin-operated dry cleaner has held the spotlight in the automatic merchandising industry. However, closely paralleling the evolution of the dry cleaner has been another significant trend.

Several manufacturers have announced plans to market package laundry and/or dry cleaning "centers," which will include everything an operator needs to establish an operating business. Included in the package are the structure to house the equipment, the cleaning or washing units themselves, and related equipment such as furniture, sinks and decorative accessories.

The programs have several advantages to operators and manufacturers. The manufacturer is able to build product identity by standardizing the appearance of the establishments which house his products. He is certain that his equipment is being displayed and used in "quality" surroundings. Obviously the added income from the sale or leasing of the entire package is a prime factor.

Whirlpool

Whirlpool has in advanced development stages a specially designed building exclusively for the company's coin-operated dry cleaners. The building, described as a geodesic dome, will house a maximum of six dry cleaners and be adaptable to many real estate sites.

Based on a mathematical division of the sphere, first models of the dome are engineered for a system of pre-cut ½-in. triangular space frames made of plywood. Also in process is a structure built of aluminum and glass.

In addition to the 26-ft dome currently under development, the company is making plans for a 39-ft dome which will house washing equipment as well as dry cleaners. The larger designs will incorporate such customer conveniences as lounges, children's room, book racks, hair dryers, etc.

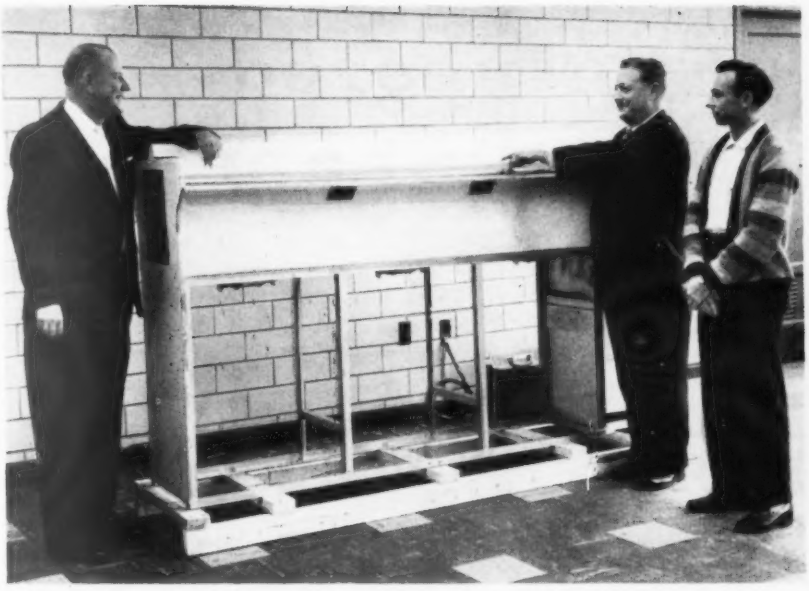
Economy in the design of the building is achieved in two ways: The self-reinforcing system of the triangular space frames eliminates the need for

(Left) — *WHIRLPOOL* — A geodesic dome-type structure housing Whirlpool dry cleaners is being marketed as a package business. The building has a diameter of 26 ft, a peak height of 13 ft, and a floor area of approximately 485 sq. ft. A typical package includes building, construction, six cleaning units, furnishings and necessary mechanical and electrical equipment.

manufacturers provide complete "kits," including building, equipment and furnishings

internal supports, and the erection of the building will take less than a week.

In the models now under construction, Whirlpool dry cleaners will be installed in a central partition which provides customer access to the front of the machines and separates the rear portion which houses the necessary mechanisms, duct work and operational equipment.



ECON-O-WASH — Newly designed "service bar" will be included in Econ-O-Wash laundry and dry cleaning centers. Other accessories, in addition to the cleaning and washing equipment, will be starch sinks, folding tables and sorting areas.

Econ-O-Wash

Small Equipment Sales, which franchises Econ-O-Wash coin-operated laundries, is currently working with Armco Steel Corp. on the design and construction of buildings which will house coin-operated washers, dryers and dry cleaners. Small Equipment Sales is part of American Laundry Machinery Industries, Cincinnati.

The industrial design firm of Lippincott & Margulies, Inc., New York City, has been engaged to work on seating arrangements, air conditioning, television, music and color co-ordination.

The Econ-O-Wash service centers, some of which are expected to be in use by this summer, will include the recently announced Econ-O-Crest coin-operated dry cleaner, automatic washers which will take loads up to 40 pounds, and 40-pound capacity dryers.

Jack A. Coleman explains the reasoning behind the "package" concept in this way: "Up to now, the industry has

TO NEXT PAGE →

(Below) — *PHILCO* — Rear view of the new Philco-Bendix Mobile Laundry Center shows how easy access for maintenance is provided. Four doors lift up and expose all of the laundry equipment contained in the vehicle.



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Circle No. 375 on Reader Service Card.

Trend in coin-op

→ FROM PAGE V-9

been satisfied with renting a small, vacant store, installing appliances intended for the home — not commercial use — attaching coin devices, and calling it a laundry. It is not. As we rapidly near the billion-dollar mark, we have to take a fresh view and revise both our equipment and our approach."

In addition to the laundering and dry cleaning equipment, the installations will have other conveniences. Bulkheads which hold the equipment have been redesigned so that each woman using the machines will have a separate area for sorting her clothes and keeping soaps and detergents.

Customers will be able to starch clothes separately in special sinks which are provided for the purpose. Work tables and new laundry carts will also be included.

Philco

Philco Corp. has announced the introduction of Philco-Bendix Mobile Laundry Centers, said to be the first specifically designed for coin-operated laundry service.

The units, measuring 10 by 55 ft, are equipped with five 50-lb dryers, nine double-load washers, three single-load washers, and water heaters. All that is needed to put the self-contained units into operation are utility and sewer connections.

According to Philco, "The Philco-Bendix Mobile Laundry Centers have the unique advantage of allowing the purchaser to get into business fast." Areas or markets lacking suitable space for full-size installations, which could be served by the mobile units, include small towns, urban renewal projects, resort areas, mobile home parks, shopping centers, temporary construction sites, service station areas, military installations, college campuses, and areas where skilled tradesmen are not available.

The trailer vehicle is manufactured by Knox Mobile Homes, Thomsen, Ga. Interior features are six large plate glass windows, and two swinging jalousy doors. Two protruding window sills provide folding area. MPM

For further information on Coin-op Equipment Components, starting on page V-19, use Reader Service Card on pages 23 and 24.



Central control system for coin-op laundries

washers and dryers electrically operated from single Temco-matic package

TEMCO INDUSTRIAL, a division of Ling-Temco Electronics, Inc., Dallas, has adapted modern electronic techniques to a central control system for coin-operated laundries.

Drawing on Ling-Temco's experience in the production of electronic and aerospace systems, Temco Industrial has developed a unit for electrically operating washers and dryers from one central station. The control device is called Temco-matic.

Temco-matic is available in seven models. The three larger capacity models control 48, 60 and 78 laundry units, ranging from 32 to 52 washers and from 16 to 26 dryers. The four smaller models control 20, 30, 36 and 42 units, and can be set for three or four coin price settings, simultaneously.

The unit replaces individual coin chutes, coin meters and coin changers with a central electrical system. After clothes have been placed in a washer or dryer, the customer steps to the control center, deposits coins, and presses the number corresponding to the number on the machine selected. The machine starts automatically and stops when the cycle is completed.

Makes change

The larger Temco-matic makes change automatically, using nickels, dimes and quarters and giving change as required. The smaller units accumulate the required change and also can be set for several price ranges from 5 cents to $1.50 for different machine types.

All money is collected in one UL approved, insurable safe, which is attached to the mounting base by two internal mounting bolts.

The larger capacity Temco-matics permit minor price changes by a flip of a switch instead of costly equipment modification. Flexibility is provided by allowing for increase of laundry units without additional control installations.

Construction features

The Temco-matic cabinet is constructed of heavy gauge, reinforced steel mounted on a ½-in. steel base which is designed for mounting permanently to



Large-capacity Temco-matic controls up to 78 washers and dryers. Coins are deposited and numbered washer or dryer button is pushed to start machine's operation. Money is collected in safe in the lower portion of the unit.



Recently introduced were two new smaller-capacity models. Unit at left controls up to 20 washers and dryers, and is suited for apartment house installations. Unit at right controls up to 30 machines, including dry cleaners, for smaller coin-operated laundries.

the floor. The upper portion contains all the electrical and mechanical components and is isolated structurally from the safe in the lower portion. Slots are provided in the top of the safe for insertion of flexible coin chutes from the changers. Money from the coin changers reaches the safe through these chutes.

A service door is located on the upper front face of the console and is secured by bayonet-type pins in conjunction with a key-type lock.

A top cover is provided to facilitate servicing and is locked by squeeze-type triggers located at the bottom center of the upper front horizontal brace. The pushbutton switches and lights are located in the top cover and are readily accessible by raising the cover.

Coin handling

Separate pushbutton switch panels and coin drops are provided. Each pushbutton switch is connected individually to a single washer or dryer and each button is numbered to correspond with the machine which it controls. The three coin drops on the larger models will accept nickels, dimes and quarters, giving change in nickels.

The two side pushbutton panels normally employ 15 and 20-cent changers for washers, and the front panel normally employs a 10-cent changer for dryers. The price for washers may be varied, for example, from 15 to 20 cents by a toggle switch located on top of the coin changer mechanism. Access to the price change switch is through the front door.

Electrical system

The Temco-matic requires a four-wire, 24-volt ac connection to each washer and dryer timer. The normal 115-volt ac connection to each timer is not altered.

Depositing coins establishes "credit" by applying 24 volts to the bank of pushbutton switches. This credit remains until a button is depressed. Should additional coins be mistakenly deposited, they will be rejected by the coin changer until the first credit established is used. When a button is depressed, the pushbutton switch completes a 24-volt circuit to the machine selected, which starts the machine and erases the credit.

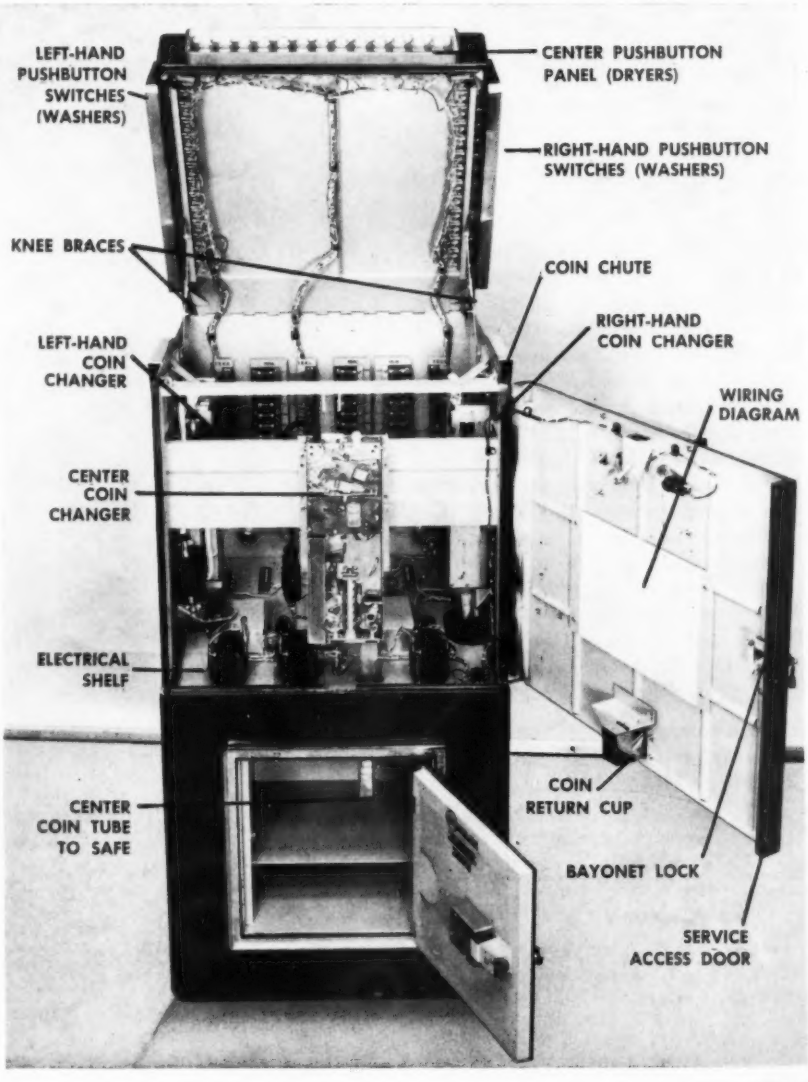
For machines which operate through a cycle (washing machines), the Temco-Matic has no control over the machine while it is operating. Therefore, if a button is mistakenly depressed on a machine that is operating, it will have no effect on the machine and it will not cause the credit on the Temco-matic to be erased.

For machines which simply operate for a period of time (dryers), pushing the button of a machine which is operating buys additional operating time.

Component arrangement

The console contains three separate but electrically identical circuits, each consisting of a panel of pushbutton switches, a coin changer, three relays, a 115/24-volt ac transformer, fuses and terminal blocks. The relays, stepdown transformers and terminal blocks are located between the upper and lower sections. This shelf also serves as a closeup panel, isolating the safe in the lower section.

The coin changers are mounted on three bayonet-type lugs affixed permanently to an adjustable mounting plate for vertical adjustment of the changers.



What are the equipment manufacturers offering?

a sampling of automatic merchandisers on the market today — how they look and what they do



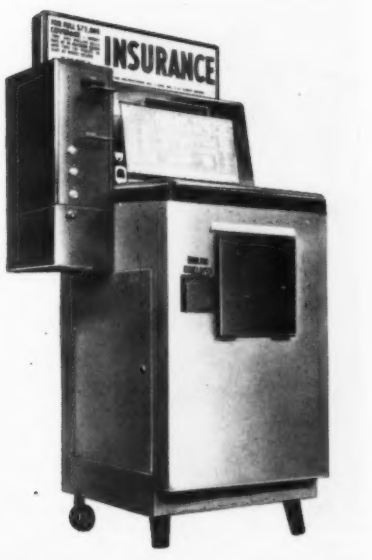
1 — TAKE-A-BREAK SNACK CENTER (Lehigh, Inc.)

1 — Doing the job of three individual machines, the Take-a-Break Snack Center vends candy, cookies, and hot drinks from one unit which measures less than 3 ft wide, about 1 ft deep and 4 ft high. Three different kinds of hot beverages can be dispensed along with a flexible combination of six different candies and cookies from the nine front loading columns. Each of the beverage and snack columns is removable and interchangeable. Cup column capacity is 75 cups. A built-in 1000-watt hot water system, which is thermostatically controlled, dispenses hot water manually. *Lehigh, Inc.*

2 — COIN-OP SUPERMARKET (Wittenborg, Inc.)



2 — Housewives in Stockholm, Sweden can shop 24 hours a day in what is considered to be the largest automatic supermarket in the world. All the ingredients for a full-course meal are available from the more than 1500 individual window compartments. Approximately one-third of the compartments are refrigerated. The installation is over 100 feet long and is built into a wall facing directly onto the sidewalk. The machines are lighted from within at night. It is estimated that a quarter of a million people pass the units daily. Money changers are provided as an extra convenience. *Wittenborg, Inc.*



3 — ELECTRONIC DOLLAR BILL SCANNER (Planetronics, Inc.)

3 — A unit for detecting genuine one dollar bills electronically scans bills at selected check points. The unit shown is attached to a standard air trip insurance vending machine, which previously accepted only 25-cent coins. The compact device can be attached to any standard electrical change-making or vending machine, or attached to the outside of a machine. As a bill is inserted in a slot, it is picked up by a belt which carries it past a scanning eye and weight and size gauge. Non-genuine bills are returned and genuine bills drop into a space provided inside the machine, and an electrical circuit is closed. *Planetronics, Inc.*

MORE VENDING EQUIPMENT ON PAGE V-14 →

4 — Recessed locks are a new feature of a recently introduced line of coin changers. Eight new models offer individual change for dimes, quarters and half-dollars, vending up to six coins automatically. Capacities up to $300 are available in the series. Insurance and burglar alarms are optional features. *National Products, Inc.*

5 — A special door handle design which covers coin slot and "A" pin locking operation is one feature of self-service storage lockers. Welded angle brackets on all outside door corners add strength and rigidity, and hinge nuts and bolts are concealed to prevent tampering. *American Locker Co., Inc.*

6 — New B-W line of self-service dry cleaners will be available in single units as well as in combinations of 2, 4, 6 or 8, with provision for adding on individual units. The units, which carry the features of the regular Norge dry cleaners, are available in white. *Norge Div., Borg-Warner Corp.*

7 — Built along the lines of a four-drawer filing cabinet, the Little Store school dispenser affords students "anytime of day" purchases of staple school supplies. Gray steel cabinet measures 53 in. high and 27½ in. wide. *Vend-Rite Mfg. Div., R. J. Tennes & Co., Inc.*

8 — A dual unit dry cleaner designed for self-service use features two 8-lb cleaning drums and a single solvent conditioning unit. Also featured is a positive filtration device to maintain maximum efficiency. The unit has a cycle time of 40 minutes. Front and rear panels are removed for service. *Philco Corp.*

9 — The new Series CC candy and pastry venders are styled to match the Series 222 cigarette dispenser. The units feature floating bearing pull handles, stainless steel delivery pan, and a hinged cabinet door which swings open to simplify service. Uniform design of the units allows side-by-side use. *National Vendors, Inc.*

10 — Model CS-100A portable electric coin counter-sorter weighs only 27 pounds and has only two moving parts, other than the motor. By simply setting the counter, flipping the switch and pouring in coins, the machine automatically counts and sorts 15,000 coins per hour. Separate sorting and counting provide an automatic check of total. *Standard Change-Makers, Inc.*

11 — Launderama coin-operated washer is said to do twice the work of a nine-lb washer. "Monitor Top" contains drive motor, timer, water level control, drain valve, spin solenoid, water-fill valve and all switches. This feature increases ease and speed of servicing. The basket, top and front are made of stainless steel. *Temco Industrial Div., Ling-Temco.*



4 — COIN CHANGER (Clesco National Products, Inc.)



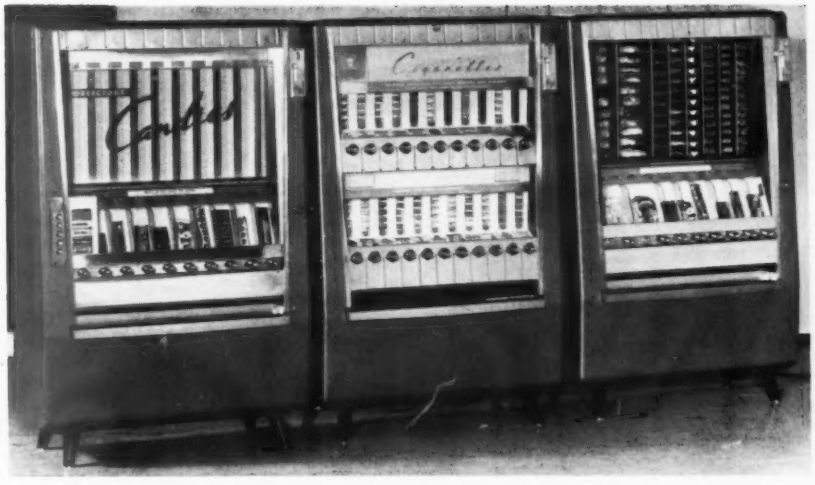
6 — NEW B-W DRY CLEANER LINE (Norge Div.)

5 — COIN-OP STORAGE LOCKERS (American Locker Co., Inc.)



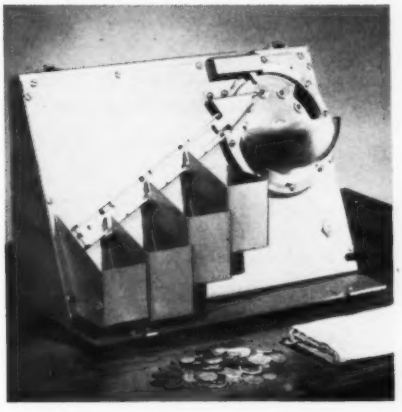
7 — *SCHOOL SUPPLY DISPENSER* (Vend-Rite Mfg. Div.)



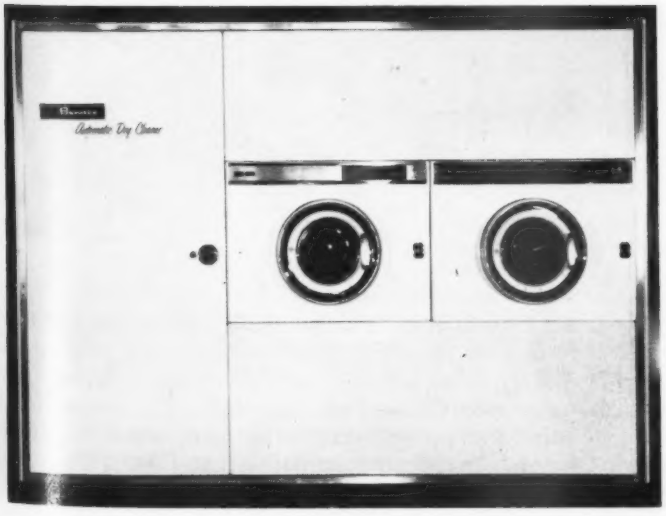


9 — *CANDY AND PASTRY VENDERS* (National Vendors, Inc.)

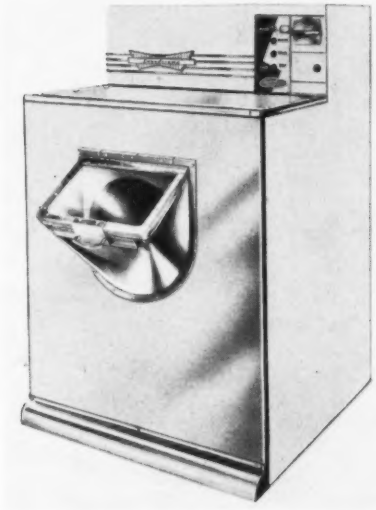
10 — *PORTABLE ELECTRIC COUNTER-SORTER* (Standard Change-Makers, Inc.)



8 — *DUAL COIN-OP DRY CLEANER* (Philco Corp.)



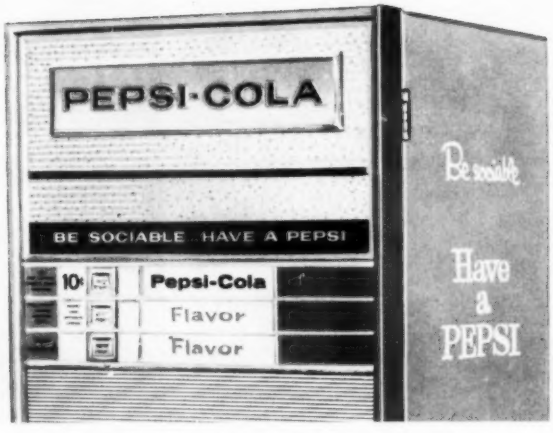
11 — *LAUNDERAMA COIN-OP WASHER* (Temco Industrial Div.)



MORE EQUIPMENT ON NEXT PAGE →



12 — *ICEBERG DRINK DISPENSER* (Cole Products Corp.)



14 — *PRE-MIX COLD DRINK DISPENSER* (Victor Products Corp.)

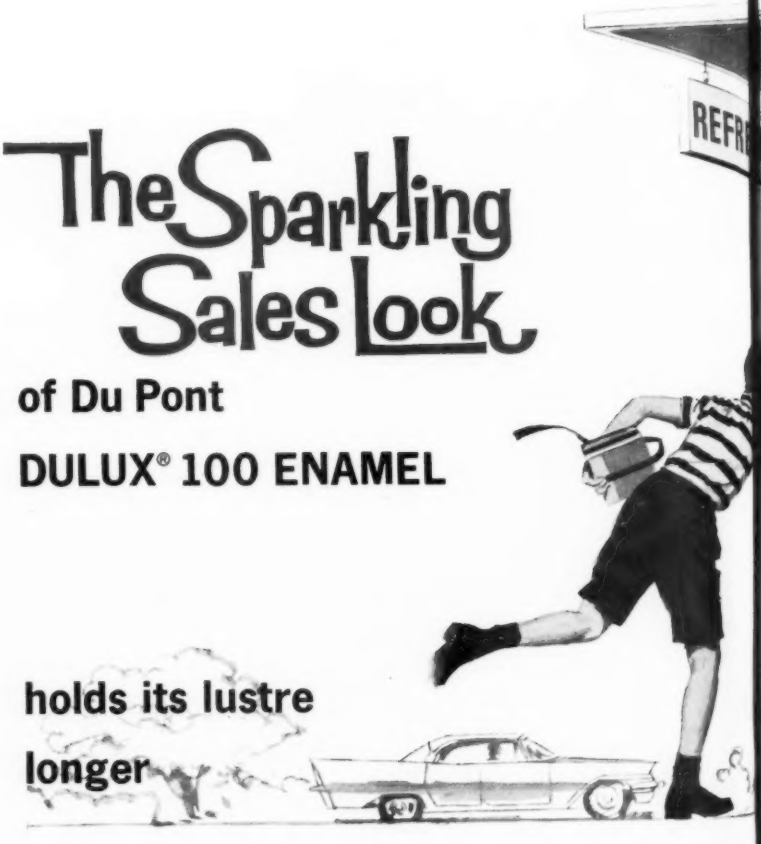
13 — *CAN VENDOR* (Choice-Vend Corp.)



The Sparkling Sales Look

of Du Pont

DULUX® 100 ENAMEL

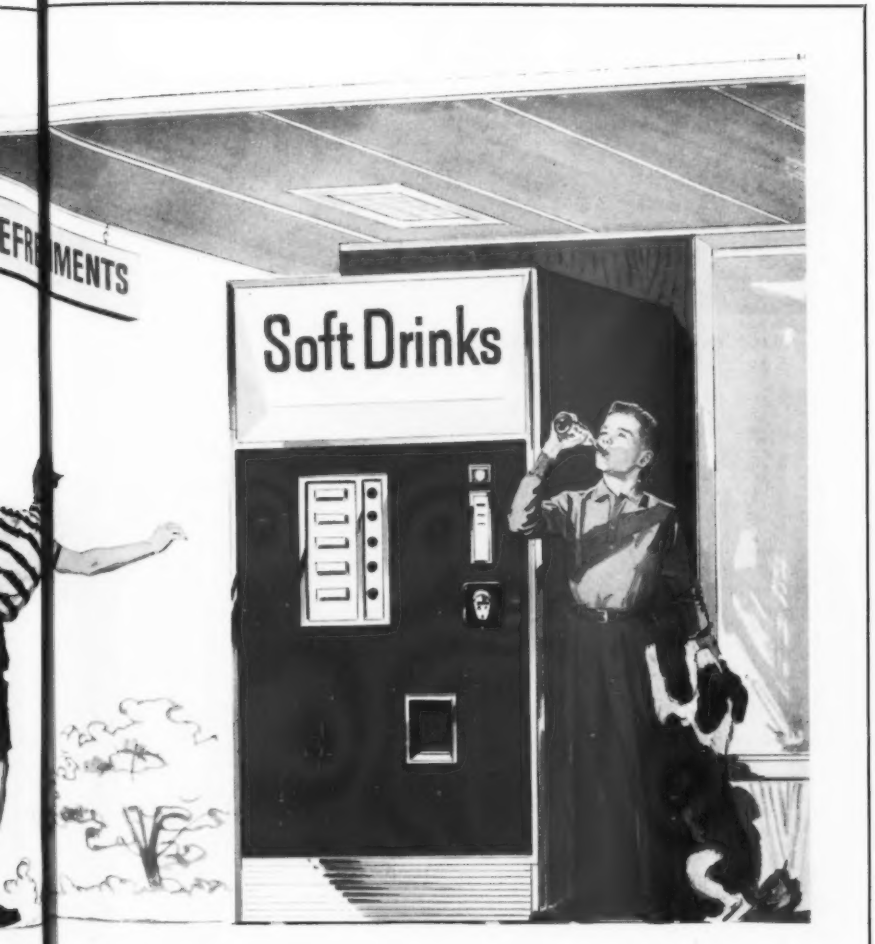


holds its lustre longer

Leading, sales-conscious manufacturers of vending machines specify Du Pont "Dulux" 100 Enamel. And with good reason. This dependable finish has a *balance* of properties that keeps products looking their appealing best ■ By actual test, "Dulux" 100 holds its luster 3 times longer than former outside enamels. It is non-bleeding . . . resists blistering, chipping and cracking despite hard wear and temperature extremes. After 18 to 24 months' exposure in a Florida Test Farm, "Dulux" 100 showed no more chalking than many conventional enamels at 6 to



15 — AUTOMATIC MILK VENDER (Norris Dispensers, Inc.)



months! ■ "Dulux" handles well on the line and is much harder and tougher after baking than conventional enamels. This makes the finished product much less likely to be marred on the production line, in transit or in the user's hands.

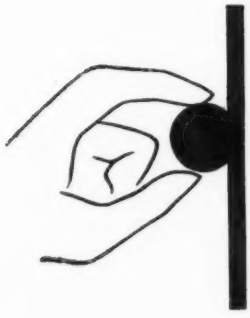
Get full details on "Dulux" 100 from your Du Pont Representative, or write: E.I. du Pont de Nemours & Co. (Inc.), 2502 Nemours Bldg., Wilmington 98, Del.

DU PONT INDUSTRIAL FINISHES

Circle No. 319 on Reader Service Card.

DU PONT

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12 — Four-flavor cold drink dispenser has a capacity of up to 1000 cups. It utilizes a high-capacity flooded-type icemaker with a stainless steel ice chipper. Flavors can be set for various carbonation. Water valves are solenoid-operated, and waterproofed molded coils are of stainless steel construction. *Cole Products Corp.*

13 — Model 312 is a fully automatic can vender with pushbutton selection of three flavors. The unit handles 12-oz, flat-top or 10-oz crown-type cans, and features a sanitized (heated blade) can opener. An automatic electric can opener will soon be standard equipment. The vender has a capacity of 312 cans; other models are available in three or four flavors with capacities ranging from 210 to 350 cans. *Choice-Vend Corp.*

14 — Pre-Mix Vender is available with attachment for serving ice in every drink in 600 and 900-drink capacity models. The ice maker can dispense up to two ounces of ice in each drink and has an attachment to make ice from city or treated water. *Victor Products Corp.*

15 — Said to be the only completely automatic carton dispenser on the market, Custom Vender has a capacity of 210 half pints or 162 full pints. One engineering feature is an automatic condensate evaporator which eliminates drain pan. Mechanism is coin-actuated, and has only three moving parts per rack. *Norris Dispensers, Inc.*

MORE EQUIPMENT ON NEXT PAGE →



16 — *CIGARETTE VENDER* (Seeburg Corp.)



18 — *DETERGENT DISPENSER ON COIN-OP WASHER* (The Maytag Co.)

17 — *LAUNDER BAR* (DO-16 Corp.)



16 — Twenty-two columns hold more than 800 packs for vending regular, king-size, flip-top boxes and flat-type packs. The unit may be set to vend simultaneously at any of three different prices. The unit has chrome-plated picture frame trim and delivery tray. Brands are displayed on angled panel at top front of cabinet. *Seeburg Corp.*

17 — Nine-column Launder Bar vends 432 packages of laundering products. Packages are gravity fed, and the coin mechanism is set for 10 cents. Other features are a stainless steel delivery chute and a base storage area. Standard colors are coral or tahoe blue; additional colors are available on request. *DO-16 Corp.*

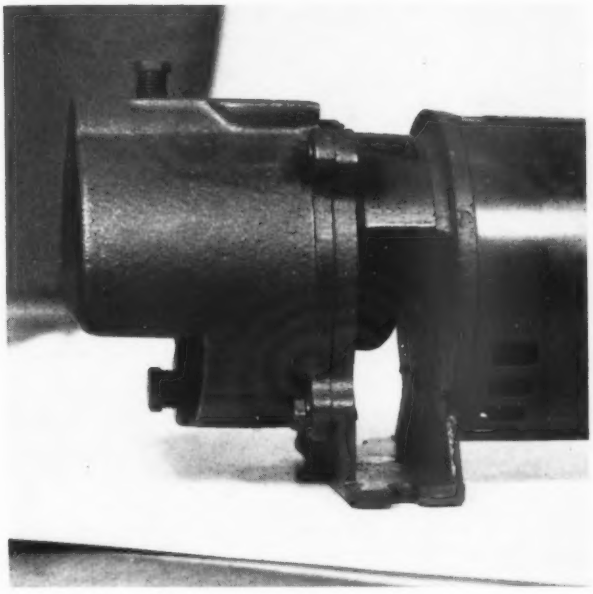
18 — A specially designed detergent dispenser agitator is now standard equipment on all Maytag commercial washers. The agitator is designed to provide more uniform distribution of dissolved detergent throughout the washer tub. Detergent poured into the funneled opening at the top of the agitator is dissolved during the fill period. *The Maytag Co.*

19 — A new land-travel insurance vending machine automatically issues validated policies. Any combination of quarters and half-dollars activates the battery-driven unit. *Policy-Matic Corp. of America.*

19 — *INSURANCE VENDING MACHINE*
(Policy-Matic Corp.)



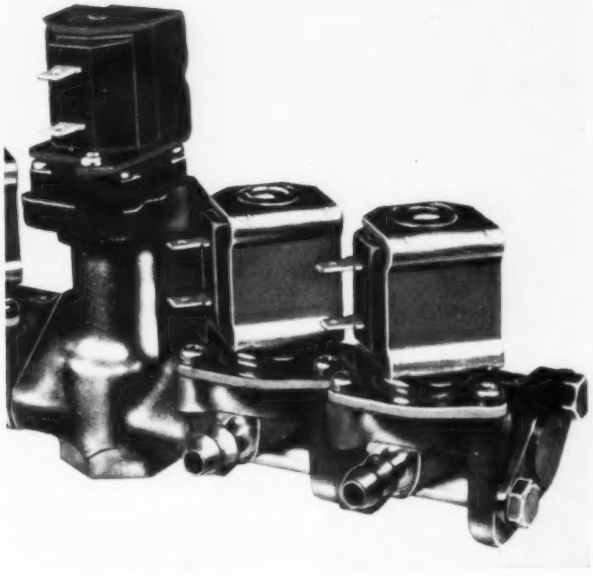
HERE'S WHAT'S NEW IN COIN-OP EQUIPMENT COMPONENTS



Coin-Op Dry Cleaner Self-Priming Pump

A new self-priming centrifugal pump line specially designed for coin-operated dry cleaning machines was recently introduced by Marlow Pumps Div., Bell & Gossett Co. Offered for use in handling perchlorethylene and other chemicals of low surface tensions, the pumps feature dependability through adaptation of special seals and slingers which are said to be impervious to effects of the cleaning agent.

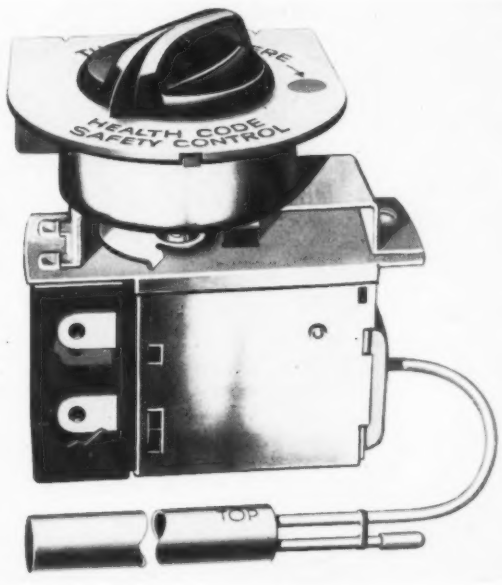
Circle No. 210 on Reader Service Card.



Vending Machine Valve

Designed expressly for tandem application in vending machines dispensing a variety of beverages, a new appliance solenoid valve is announced by the Detroit Controls Div., American Radiator & Standard Sanitary Corp. The development, known as the "VDS-5000 Multiple Directional Control Valve," is designed to fit together in a battery arrangement in assemblies of one, two, three, four, five or more.

Circle No. 212 on Reader Service Card.



Health Safety Control

Controls designed to automatically prevent vending of food or beverages at unsatisfactory temperatures are offered by Ranco, Inc. The controls are particularly applicable in light of the U. S. Sanitation Ordinance and Code which suggests that vending machines for dispensing readily perishable foods and beverages be equipped with controls which will insure proper maintenance of temperature.

Circle No. 211 on Reader Service Card.

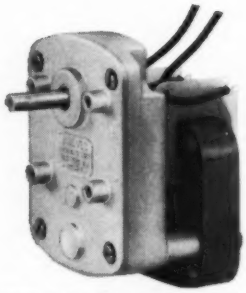


Water Heater

A line of vending machine water heaters is offered by Payne Products Co. All models are available in galvanized tanks with a 1-year guarantee, or with glass lining with a 5-year guarantee against rusty water or leaking tanks. One model has an invector-type element, and another model has a combination immersion element and thermostat, and is fitted for the addition of another element and thermostat.

Circle No. 213 on Reader Service Card.

MORE COMPONENTS ON NEXT PAGE →

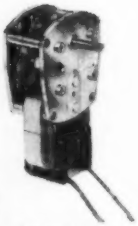


NEW Series FB enclosed Helical gear motor. High performance — low noise. Available with brake or clutch.

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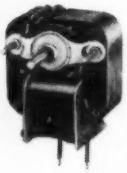
We may be making — right now — the motor you need. Write, wire, phone NOW . . . and find out.



Series S Open Spur Gear Motors



Series W Open Worm Gear Motor



Shaded pole motor — use alone or at backbone for geared motor.

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Circle No. 308 on Reader Service Card.

HERE'S WHAT'S NEW IN EQUI

Vending Machine Wire Actuator

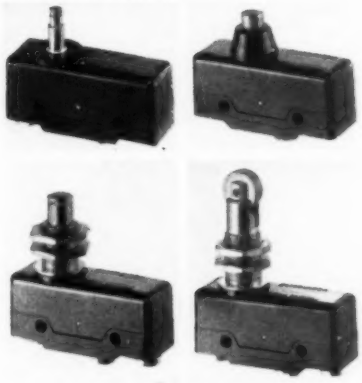


A one-piece welded wire vending machine dispensing flipper (top in photo) has replaced a nine-piece unit assembled from a machined steel rod and eight spring steel fingers fastened with two screws each (bottom in photo).

Manufactured by E. H. Titchener & Co., the wire re-design features a rod that is automatically straightened and cut from 5/16 in. coiled steel wire. Wire loops form the flippers and they are resistance welded to the shaft. The assembly is held in place by swaged ears and a cotter pin through a drilled hole.

Circle No. 214 on Reader Service Card.

Basic Klikswitches

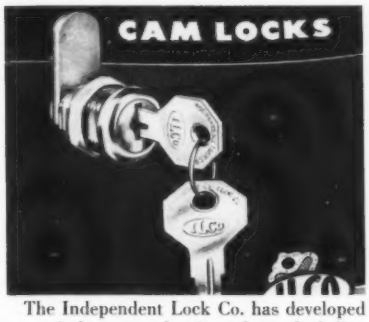


S4 Basic Klikswitches offered by General Controls Co. are available in several types.

Slenderline Plunger (upper left in photo) is designed for in-line actuation where plunger overtravel is required, and is available with screw-type, combination solder, quick connect, and other variations of termination. Compact Overtravel Plunger (upper right) is designed for in-line applications such as slow moving, gradual rise cams. It is also available with screw-type, combination solder, quick connect, as well as other variations. Panel Mounting Overtravel Plunger (lower left) is suitable for applications where overtravel is considerable, such as manual pushbutton operation or in-line mechanical operation. It is a general purpose snap-action switch. Overtravel Plunger and Standard Roller (lower right) is a panel mounting switch designed for precision heavy-duty actuation by cams or slides. Available with screw-type combination solder, quick connect, and other variations or termination.

Circle No. 215 on Reader Service Card.

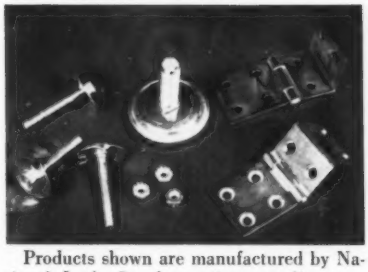
Cam Locks



The Independent Lock Co. has developed an entirely new and universal cam lock line with a series of standardized basic units in a range of sizes and with optional features, which are tailored to the needs of the product design engineer. The line is said to incorporate compactness, trim appearance, ease of installation and versatility of function. A new design allows all possibilities of key travel with a single plug and shell for each length.

Circle No. 216 on Reader Service Card.

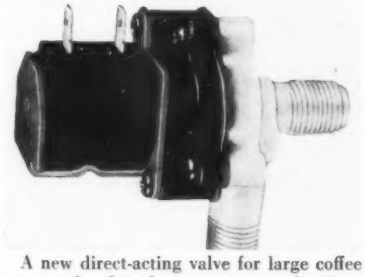
Hardware And Fasteners



Products shown are manufactured by National Lock Co. for various vending machines. Included are a leg leveler (upper center) for adjusting vending machines to any floor; hinges (right) for the service door; preassembled nut and washer combinations (lower center) used in assembling machines; and crating bolts (left) used to secure the assembly for shipment.

Circle No. 217 on Reader Service Card.

Direct-Acting Valve



A new direct-acting valve for large coffee urns and other low-pressure applications has been developed by the American-Standard Controls Div. Designed for liquid-dispensing systems in beverage vending machines operating with a low head pressure (where inlet pressure is less than 24 in. water column) this solenoid valve has a nylon 90°-angle body. It is suitable for use with water temperatures up to boiling.

Circle No. 218 on Reader Service Card.

TO PAGE V-22 →



how Sperry Extrugineers can help designers of vending machines

THE WHOLE JOB *Sperry* is equipped by long years of experience and wholly integrated facilities to take over entire responsibility for the part you need that can be extruded of rubber, plastics, viton, hypalon, silicone . . . that can be molded on extrusion of rubber. *Sperry* designs, formulates, tools such extrusions . . . molds ends of rubber extrusions . . . small, large, standard and irregular parts for industry. *Sperry* makes straight lengths, notches, punches, miters, vulcanizes, preforms the parts which industry needs . . . of natural, synthetic, neoprene, Hycar rubber; of plastics; of silicone where heat requires.

DESIGN Whether *Sperry* quotes on an extruded part which has already been engineered, or assists you in developing an extrusion from scratch, the *Sperry Extrugineer* uses not only his own background but also the thousands of accumulated years of skill of the entire *Sperry* team. *Sperry* will accept your challenge to create or improve the extruded or molded part. Sperry Extrugineers are free-thinking . . . creative . . . without pre-conceived ideas or obstinate adherence to past usage.

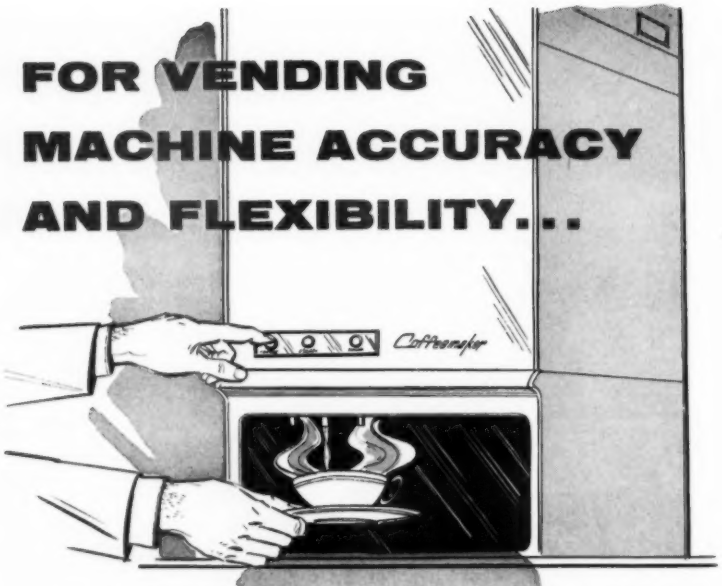
COSTS At *Sperry,* inventive ingenuity and capital investment have been teamed with careful supervision to insure you get top quality extrusions at minimum cost.

BLUEPRINT Send us the blueprint and the use data of the part you want made or have us do the job from scratch if the part has not yet been engineered. Write today for our illustrated brochure describing how Extrugineering insures exact specifications, quality control and economy.

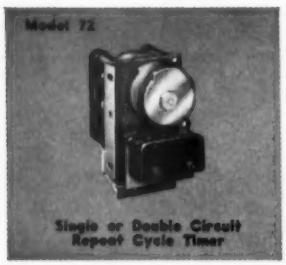
THE SPERRY RUBBER & PLASTICS CO.
31 WEST SEVENTH STREET • BROOKVILLE, INDIANA
TELEPHONE BROOKVILLE 600, 601, 602, 603

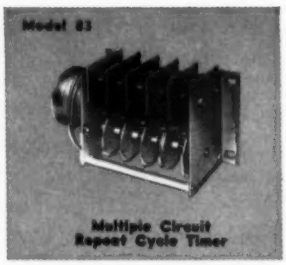
Circle No. 360 on Reader Service Card.

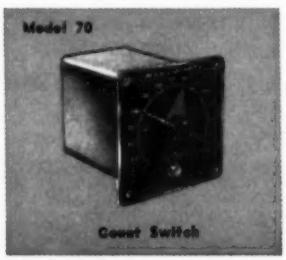
FOR VENDING MACHINE ACCURACY AND FLEXIBILITY...



new, low cost HAGEN cycle timers and count switches







These new HAGEN time and count devices make possible continuous program control over a wide range of cycles as required in the operation of your vending machines. Powered by "time-tested" HAGEN synchronous motors, these devices can be supplied to operate in hundreds of standard combinations or they can be custom-designed to your specifications. HAGEN dispensing controls can also help control your production costs. Initial cost is low . . . helping you maintain a competitive price on your equipment. And the superior construction of HAGEN controls means less maintenance, far fewer field returns.

Write for FREE bulletins on HAGEN time and count devices . . . the low cost, high quality controls for vending machines and commercial appliances such as dishwashers, water softeners and dry cleaning equipment. Address Dept. MPM-561

BLISS HAGEN MANUFACTURING DIVISION / BARABOO, WISCONSIN
Of The Gamewell Company
AN E. W. BLISS COMPANY SUBSIDIARY

Circle No. 326 on Reader Service Card.

Gearmotor



Brevel Products Corp.'s Model FB Gearmotor has as an optional feature a brake to limit overtravel and hold the gear train from drifting when coil is de-energized. Also optional is a clutch for release of gear train from motor to permit faster stopping. The motor has a speed range of 4.5 to 200 rpm, and is normally furnished with helical rotor pin and first gear.

Circle No. 219 on Reader Service Card.

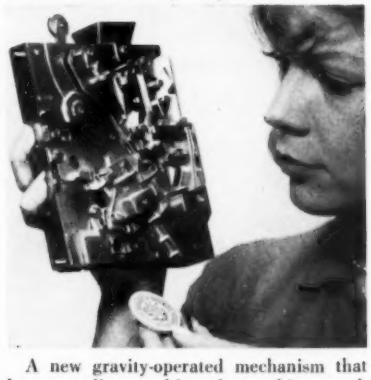
Snap Bushings



Heyco nylon snap bushings, manufactured by Heyman Mfg. Co., are designed for use in insulating wires, cables or harnesses through panels, chassis or housings. They are available for mounting hole sizes ranging from ¼ in. to 2 in. in diameter with varying inside diameters, and are also available in hole plug form.

Circle No. 220 on Reader Service Card.

Four-In-One Slug Rejector



A new gravity-operated mechanism that keeps vending machines from taking wooden nickels, or any other type of slug or foreign coin, has been introduced by the ABT Div., Automatic Canteen Co. of America. Called the Model 4000 Four-in-one slug rejecter, it enables a vending machine to validate quarters, nickels, dimes or pennies, and reject all other coins. With 20 percent fewer parts, the unit is said to be more efficient, reliable and easier to service.

Circle No. 221 on Reader Service Card.

Coin Meter



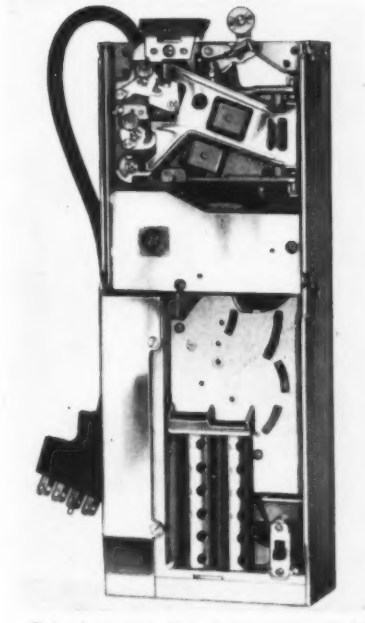
The H. Greenwald Co. announces its new 5800 Series coin meter specifically designed for coin-operated drycleaning machines. The flush-mount meter employs a drop coin system with a rejector mechanism for maximum slug protection and contains a coin release to prevent jamming or damage from improper coins.

A prime feature of the meter is the versatility of price selection. With a turn of a switch, the operator may convert the price of operation from one denomination to another, and has complete control without additional service costs.

Special money vaults are available containing either thread-type or quarter-turn locks.

Circle No. 222 on Reader Service Card.

Series 90 Coinco-Changer



Coin Acceptors, Inc., has announced the introduction of their new and simplified Series 90 Coinco-Changer with the improved Series 70 Acceptor. The basically different design of this unit eliminates many parts, such as spacers, springs, levers and screws.

TO NEXT PAGE →

IMPACT

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SYNTHETIC PEARL ESSENCE

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LUSTROUS SYNTHETIC PEARL IN BEAUTIFUL COLOR

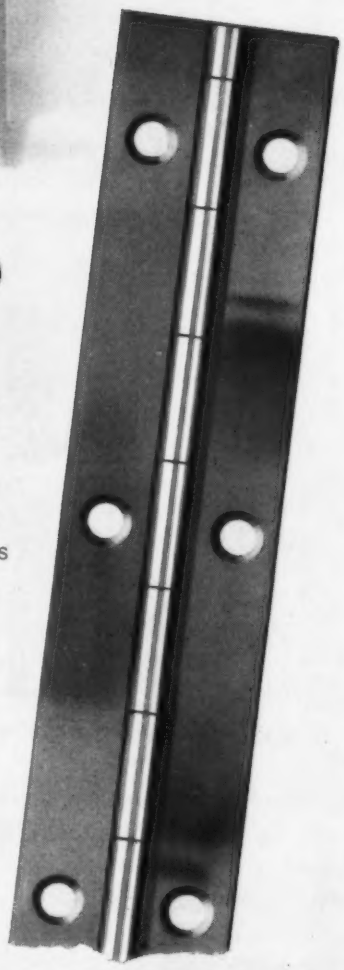
With Nacromer and Murano, you'll find that you can create many unusual effects ideally suited to entire surfaces,trim or name plates. Automotive manufacturers, for example, have found Nacromer finishes ideal for obtaining maximum consumer appeal for the cars they exhibit at shows.

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Large bearing surface guarantees smooth, no-sag operation. In lengths from 4" to 96", widths ¾" to 4". Pierced, swaged, flat or specially formed, all to your order. Made of steel, brass, aluminum, or stainless steel in all popular thicknesses, and in a variety of handsome, durable finishes. Ask about National Lock's complete line of vending machine hardware . . . locks, casters, glides, screws and bolts, leg equalizers . . . "all from 1 source."

Manufacturers, write for hinge catalog.

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International Division • 13 E. 40th St., New York, N.Y.
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Components

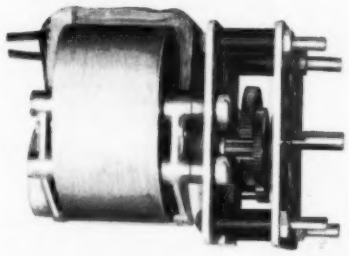
→ FROM PAGE V-23

It is designed to accommodate nickels, dimes and quarters.

No parts are riveted or staked to the housing, making for ease in servicing. Electrical terminals are equipped with quick disconnects.

Circle No. 223 on Reader Service Card.

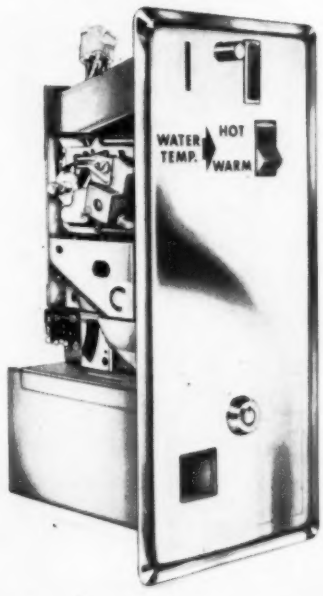
Open-Type Gear Motor



Barber-Colman Co. has released specifications on a heavy-duty double plate open-type gear motor. The motor was designed for overhanging or radial thrust loads. It can be furnished with either 48 pitch or 32 pitch gears which permits the use of the highest torque base motors — loads up to 85 lb-in. All gears are hobbed and hardened to resist corrosion. Gear shafts are double supported and run in sintered bronze bearings lubricated by large oil wicks. Frame plates come with four mounting bolts extending through either the front or back.

Circle No. 224 on Reader Service Card.

Coin Control Package



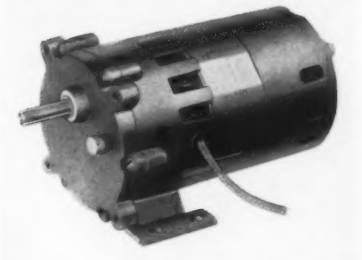
Coin Acceptors, Inc. has announced development of the 20-1 Coinco-trol Accumulator, a completely self-contained, flush-mounted coin control package for automatic laundry equipment. The unit accumulates up to nine coins of any one denomination. The acceptor can be easily

changed to accept nickels, dimes or quarters.

The "coin drop" principle is employed, leading to a removable, lock-type cash box featuring over 52 cu. in. of coin storage. Cash drawer is flush-mounted, and is available with hardened steel, tamper-proof lock.

Circle No. 225 on Reader Service Card.

Continuous Duty Gear Motor



A sub-fractional hp four-pole, shaded-pole gear motor has been introduced by von Weise Gear Co. The motor, designated VW 22, is designed for continuous duty. It operates at lower speed, assuring greater quiet and longer life. The motor is available in three sizes, 1/30, 1/60 and 1/100 hp, and in nine speeds of from 1 to 200 rpm. It is less than six in. long, less than four in. in diameter, and weighs from four to six lbs.

Circle No. 226 on Reader Service Card.

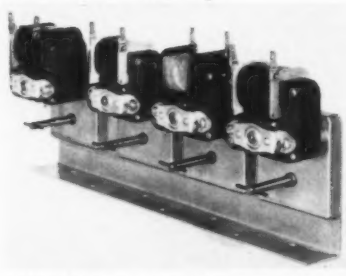
Terminals And Connectors



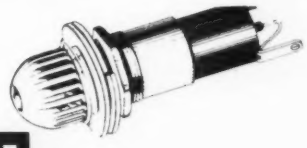
Covering the larger wire sizes through Wire Range #2 AWG, a new line of large size solderless electrical terminals and connectors has been introduced by ETC, Inc. Immediately available from stock, the new line includes over 100 parts. Elongated ring terminals for tight clearances are included, as well as regular ring terminals, butt and parallel connectors. All are made in wire ranges of #8 (.050 in. stock), #6 (.057 in. stock), #4 (.075 in. stock), and #2 (.075 in. stock).

Circle No. 227 on Reader Service Card.

Gear Motor Assembly



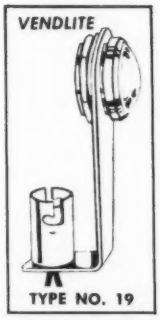
Molon Motor and Coil Corp. is offering a

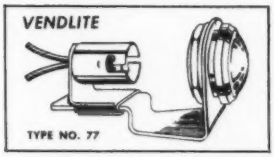


DRAKE

offers you superior performance with "Vendlite" INDICATOR LIGHTS...

USE NICKELS ONLY





EMPTY



These practical Indicator Light Assemblies were specially designed by DRAKE for vending machine use. They feature a 1" pilfer-proof glass lens in both the horizontal and vertical styles. The bezels are of polished chrome, for attractive appearance. Their open construction aids heat dissipation. Lamps may be replaced from back of panel only, also a pilfering preventative. They are available in a full range of terminals.

Printed discs may be obtained with any wording which fits within the allowable space. *DRAKE now supplies these discs made from non-oxidizing, heat-resistant materials, which prevents disc discoloration.* Or VENDLITES can be supplied with plain lenses, convex, smooth, frosted on back, in an assortment of colors.

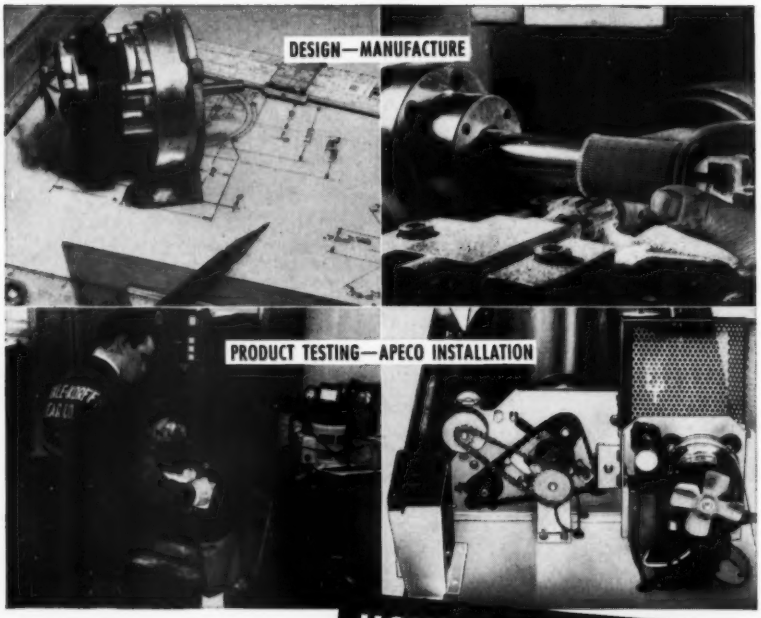
Better designed, precision-produced DRAKE units are specified by leading manufacturers in every field where Indicator or Controlled-Illumination Lights are used. Our experts will gladly help you to the efficient and economical answers, with better quality, better delivery and often, better prices.

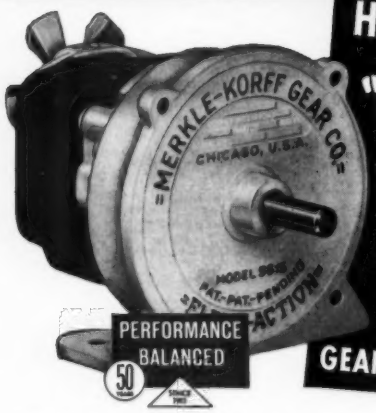
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MINIATURE LIGHTING SPECIALISTS

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HOW MERKLE-KORFF "PERFORMANCE BALANCE" PAYS OFF IN FHP GEARMOTOR DEPENDABILITY

Performance Balance is the perfect mating of Merkle-Korff motor and gearing to your specific application. It prevents *money waste* and *equipment damage* through overpowering, and eliminates *operating failures* due to occasional low voltages and the many hidden hazards of underpowering. Either, or both, the result of "underknowledge" of the drive system by a gearmotor manufacturer.

Merkle-Korff's total understanding based upon 50 years of experience in supplying the right power unit for any given job is available to you. We will, and do, develop and manufacture gearmotors designed to your individual requirements, not only to perform satisfactorily, but to do so at lowest cost. Merkle-Korff service is unique in this respect.

Performance Balance, therefore, is not just a play on words. It is your guarantee of on-the-job performance and dependability. Thousands of cases exist proving the worth of *Performance Balancing*.

Literature is available. Better still, send us your drawings or product sample so our Applications Engineers can give you a complete evaluation of motor and entire drive system! There is no obligation.

MERKLE-KORFF MK GEARED MOTORS

MERKLE-KORFF GEAR CO.

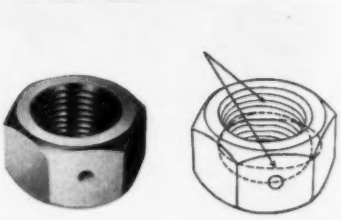
212 NORTH MORGAN STREET • CHICAGO 7, ILLINOIS • MOnroe 6-1900

Circle No. 341 on Reader Service Card.

series of individual gear motors assembled and fastened to a stamped steel mounting plate. The steel plate also serves as a cover for the die-cast gear housing of each motor. Such an assembly is said to offer many advantages where a number of gear motors are to be mounted in close proximity to each other. Grouped together on a single bracket, installation is simplified, and extra handling and mounting of individual motors is eliminated.

Circle No. 228 on Reader Service Card.

Two-Way Lock Nut

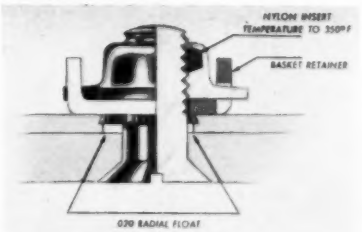


The MacLean-Fogg Lock Nut Co. offers a re-usable, double chamfered lock nut designed for automatic application. The double chamfer allows the nut to be applied from either side and eliminates the need for selective devices. The locking device of the nut is in the body so that greater locking power is assured when the nut is mounted flush with the end of the bolt, or when all threads are not used. The nut uses two locking principles: it is ovalized to give 180° spring, and the threads are deflected at the point of lock so that the nut can be locked in any position.

The Two-Way Lock Nut is furnished in sizes #5 through 1¼ in. American Standard finished dimensions. Other sizes can be ordered as specials.

Circle No. 229 on Reader Service Card.

Floating Clinch Nut



Greater tolerances for mating assemblies and simplified installation methods are the important advantages claimed for the user by the new floating clinch nut design introduced by the Elastic Stop Nut Corp. of America. These self-retained clinch type "blind" fasteners (Type NC4284) provide load bearing threads in thin sheet metal assemblies such as electronic chassis, instrument panels and cover plates.

The nuts are manufactured both from carbon steel and 18-8 stainless in machine screw sizes No. 4, 6, 8 and 10. For each thread size a series of three baskets with alternate shank lengths of .040 in., .060 in., or .090 in. is offered for easy flush installation in sections of equivalent thicknesses.

Circle No. 230 on Reader Service Card.

MAC-BOND 71-D
A 3-STAGE METAL PREPARATION SYSTEM

THE SIMPLIFIED PHOSPHATE OPERATION

THAT GIVES THE PERFECT PAINT BOND

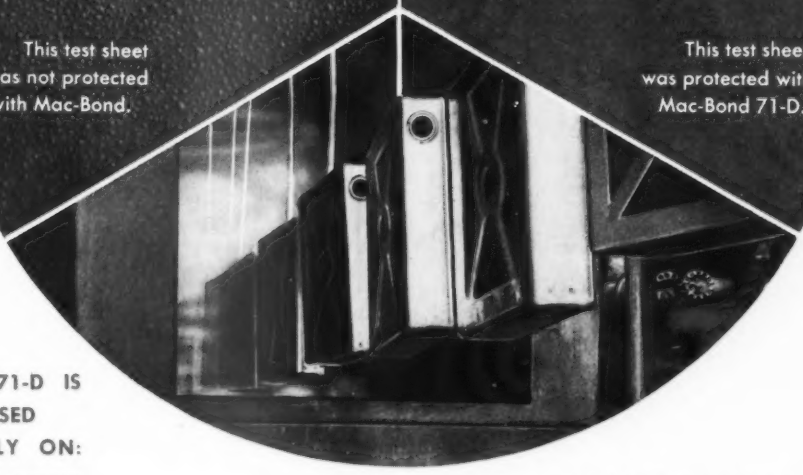
1 Combination cleaner and phosphatizer.

2 Water rinses.

3 Provides a chemically sealed coating for maximum corrosion resistance.

This test sheet was not protected with Mac-Bond.

This test sheet was protected with Mac-Bond 71-D.



MAC-BOND 71-D IS BEING USED SUCCESSFULLY ON:

CAMERAS • MOLDING • APPLIANCES • TAPE RECORDERS • TV CABINETS • LAWN FURNITURE • TOYS • OFFICE FURNITURE • AND MANY OTHER PRODUCTS

Mac-Bond 71-D is a highly efficient and economical cleaner and phosphatizer suitable for pressure washers and still-tank cleaning and giving a maximum paint bond and rust resistant coating.

Metal products manufacturers, both large and small, are finding the Macco 3-Stage System is solving their paint-adhesion problems with utmost dependability and economy. (*Also adaptable for one to six stage operations.*)

WRITE OR PHONE FOR A MACCO SERVICE ENGINEER TO SHOW YOU HOW THIS SYSTEM CAN SAVE YOUR PLANT MANY OPERATING DOLLARS

THE METALWORKING INDUSTRY LOOKS TO MACCO FOR LEADERSHIP

CLEANING COMPOUNDS
CUTTING LUBRICANTS



DRAWING COMPOUNDS
RUST PREVENTIVES
FORGING COMPOUNDS
EXTRUSION LUBRICANTS

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CHEMICAL COMPOUNDS

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vending machine CC CONTROLS of proven reliability

Millions of CC controls in use daily are a proven record of reliability — reliability brought about by years of experience in design . . . extra care in manufacture. Controls Company makes the broadest and most complete line of controls for the vending industry available anywhere.

Controls Company products are used today by vending machine manufacturers to control actuators, valves, liquid level and selection. In addition to the typical controls shown below, CC engineers offer the most comprehensive control experience — to help you develop better dispensing equipment.

For complete information on existing products, or skilled engineering assistance on any control problem, write direct.



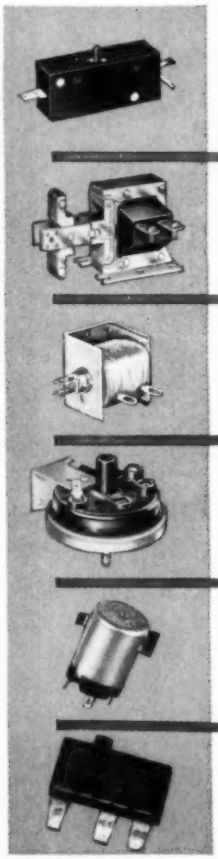












SERIES 750 SNAPAC SWITCHES — Available in 3 types (pin plunger, lever action, panel mount). For limit, safety interlocking, door switch and control switch requirements. Also compact and economical series 755 Snapac switches for making and breaking 2 circuits.

SERIES 800 DOUBLE T SOLENOIDS — Four sizes offering 12 sets of electrical characteristics satisfy virtually any application. Features include new encapsulated coil protection, exclusive double T plunger resulting in more pull at point needed. 110 and 220 v.

SERIES 860 IRONCLAD SOLENOIDS — Designed especially for applications requiring compact size. For greater efficiency and high sealing pull, shading coil is in the base of plunger. Exceptionally quiet and dependable, for intermittent or constant duty. Special-voltage models can be supplied.

LIQUID LEVEL CONTROL SWITCH — Used whenever economical and dependable control of liquid level or air pressure is required. Excellent stability and repeatability over a wide range of temperature and humidity conditions. Precision snap-action switch mechanism.

SERIES 864 MINIATURE CONTACTORS — These new, miniature contactors from Controls Company of America are smaller and more economical than conventional relays. Which makes them especially suited to vending machine service. All contacts are enclosed, for long, dependable performance.

SERIES 760 MINIATURE SNAPAC SWITCHES — You can substantially reduce space requirements and manufacturing costs with these rugged SPDT switches. They're half the size of conventional snap switches, cost ⅓ less. Available with pin plunger, level action, or bushing mount.

Additional CC products include refrigeration and air-conditioning valves, heating controls, a-c and d-c motors, timers, solid-state devices and precision switches. . . all with a proven record of reliability.

Creative controls for industry

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APPLIANCE AND AUTOMOTIVE DIVISION
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Heating & Air Conditioning Milwaukee, Wisconsin · Redmond Motors Owosso, Michigan · Lake City Inc. Crystal Lake, Illinois · Electron Division Tempe, Arizona · Control Switch Division El Segundo, California · Also Cooksville, Ontario; Zug, Switzerland; Nijmegen, Holland; Sao Paulo, Brazil; Buenos Aires, Argentina; Seine, France.

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Today's Topic: Refrigerator Shelves

How do yours rate with the Board of Public Opinion?

Rusty refrigerator shelves get a thumbs-down verdict; so do shelves and trays that warp and crack. But this is the risk when you replace quality *aluminum shelves* with those made of other materials. The few pennies you save per refrigerator can be the costliest savings ever when you evaluate the possible long term damage to your reputation . . . and sales!

Aluminum shelves and trays are a basic requirement in *every price range*. Only aluminum is rustfree and carefree, lightweight and strong, nontoxic and corrosion resistant. So why take a chance? Why gamble with your reputation for quality when you can be so sure with aluminum.

Aluminum shelves can be easily fabricated in many cost-reducing forms—from wire, formed sheet, expanded extrusions, etc.—in a variety of alloys and colors. Reynolds Aluminum Specialists will help in your design and production—or will fabricate shelves for you to your specifications. *Reynolds Metals Company, P. O. Box 2346-AM, Richmond, Virginia.*

REYNOLDS ALUMINUM

Watch Reynolds TV show "Harrigan & Son", Fridays—ABC-TV

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Polymerin*

HELPS SELL GLOBE-WERNICKE OFFICE EQUIPMENT

For more than three-quarters of a century, The Globe-Wernicke Co., Cincinnati, Ohio, has been manufacturing office furniture and equipment to the most rigid standards of quality, and one of its most important concerns is with the finish.

For Globe-Wernicke knows that in today's world of color, the attractiveness of the finish helps importantly to clinch that first sale. It also knows that rugged durability and resistance to impact, abrasion, perspiration, alkalies, and detergents keep the equipment looking new and bring the satisfied customer back for more.

That's why Interchemical's POLYMERIN has been a Globe-Wernicke standard for many, many years.

Are YOU looking for a finish that will stand the test of time? Try POLYMERIN! You'll like its trouble-free performance!

Interchemical
CORPORATION
Finishes Division

Headquarters Office: 224 McWhorter Street, Newark 5, N.J. Factories: Chicago, Ill. • Cincinnati, Ohio • Elizabeth, N.J. • Los Angeles, Cal. • Newark, N.J. • Mexico City, Mex. In Canada this product is made by Aulcraft Paints Limited, Toronto, Ontario, and sold under its trademark. **POLYMERIN* is a trademark of Interchemical Corporation.*

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industry news

Bayley Blower Purchased

Bayley Blower Co., Milwaukee, Wis., recently announced that all their Common Stock had been purchased from the Green Fuel Economizer Co., Beacon, N. Y., by a group of local Bayley executives. The new corporate officers are Vance Smith, president; Paul D. Persinger, vice president; and Walter S. Davis, secretary. Bayley is one of the oldest manufacturers in the heating, air conditioning and ventilating field.

Tappan Ranges for Apartments

The Tappan Co., Mansfield, Ohio, has announced receipt of a contract to provide approximately 25,000 ranges for apartment units in New York City and San Francisco. These apartments are located in 5 different privately constructed housing communities which are acclaimed as model urban housing developments. Believed to be the largest single order of ranges ever placed for immediate delivery, these ranges will replace existing units in apartments built during the 1940's. Models included in the contract will have Tappan's newly developed one piece wrap-around chassis. The new framework is completely covered with porcelain enamel, with the front, top, back and base of the unit made from a single sheet of steel. This is an innovation in range design which completely eliminates cracks, bolts, or welded pieces in the main chassis section.

New Plant for Designcraft Metal

Designcraft Metal Mfg. Co., Brooklyn, N. Y., has contracted to lease a new one-story 31,000-sq-ft plant and office building now under construction in Carlstadt, N. J. Designcraft will transfer its entire operations from Brooklyn to the site early this summer when construction is expected to be completed. The firm manufactures metal furniture and office equipment.

Award to O'Keefe And Merritt

O'Keefe and Merritt Co., Los Angeles, has received design recognition for its new gas wall-hung range, the Contemp, by the California Design Exhibition. The new range was designed by Lewis and Tweedy, in conjunction with O'Keefe and Merritt. The Gas Contemp, that can be hung on a wall, set on a base cabinet, or built-in, has the oven and broiler at reach-in height, eye-level controls, and vanishing burners.

Developments at Universal Match

Universal Match has announced that their net sales for 1960 were $88,828,577, up 23 percent over 1959, and the net income was $5,461,042, up 12 percent over 1959.

The company has also announced the intent for the merger of Universal Match Corp. and Universal Controls, Inc., of New York City. Universal Match would be the surviving corporation.

In addition, Universal Match is negotiating for the acquisition of Reflectone Electronics, Inc., Stamford, Conn. Reflectone designs and manufactures advanced electronic and electromechanical systems for military and industrial application.

GE Announces Warranty Plan

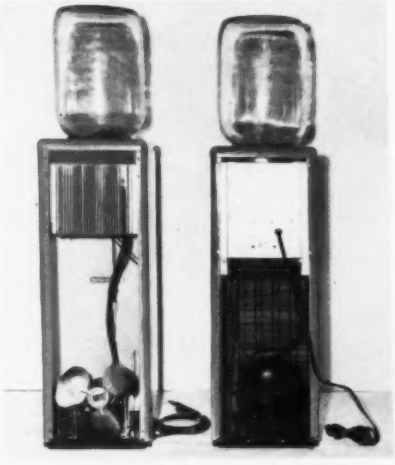
All renewal parts used in the servicing of General Electric major appliances will soon carry a printed warranty, according to an announcement from the firm's Parts Distribution Center in New Concord, Ohio.

The warranty will be good for one year when used on appliances that have passed their warranty date. Otherwise the warranty on the part will expire at the same time the warranty on the appliance itself expires.

The printed warranty will be included in, or printed on, every package that comes out of the distribution center.

Westinghouse To Produce Thermoelectric Water Coolers

Westinghouse Electric Corp. began production in April of a thermoelectric water cooler. Designed for use in either homes or offices, the water cooler's refrigeration process comes directly from electricity without the need for a conventional compressor. In the thermoelectric cooling portion, electricity passes through junctions of two dissimilar semiconductor materials, creating cold without the use of any moving parts.



This photograph compares the inside cabinet areas of the new Westinghouse thermoelectric water cooler, left, with a conventional unit, right. The cooling components in the thermoelectric unit require 25 percent less volume than those in a standard compressor operated unit. Except for the fan at the bottom used to dissipate the heat drawn from the cooling elements, there are no moving parts to the thermoelectric cooling system. At right, the conventional cooler includes a "network" heat exchange system, in addition to the traditional motor-driven compressor. The 36-inch cabinet height has been retained because it places the water tap at a convenient level.

John W. Craig, Westinghouse vice president and general manager of the company's major appliance division, pointed out that Westinghouse has been

Amana Cited for Service to U. S. Government



Walter A. Wendler (seated), vice president, sales, of Amana Refrigeration, Inc., Carl R. Telander (left), sales administration, and Tom Parks, export department, examine citation from the U. S. Dept. of Commerce "in recognition of outstanding service to the United States Government for contributing to the success of the Office of International Trade Fairs presentation of official U. S. exhibits during 1960, thereby aiding significantly in the advancement of world understanding of peace and prosperity under the American system of competitive free enterprise."



Every sheet, coil or tubing shipment of Quaker State aluminum is now certified in writing. It's your assurance that *your* order has passed our rigid standards of quality control to meet your exacting specifications.

SPECTROGRAPHICALLY ANALYZED
Our quantometer spectro-chemically analyzes every rolling ingot cast at Quaker State. It determines within a tenth of one percent the amount of each alloying element. Wet Chemical Analysis will be made by our chemists when requested.

QS M

HOWE SOUND COMPANY

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Mill Producers of Aluminum Sheet, Coil, Tubing and Extrusions

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actively engaged in thermoelectric studies for some 30 years, but "we have just recently uncovered materials which can be used efficiently enough to permit practical applications, such as in the thermoelectric water cooler."

Howard Completes New Plant

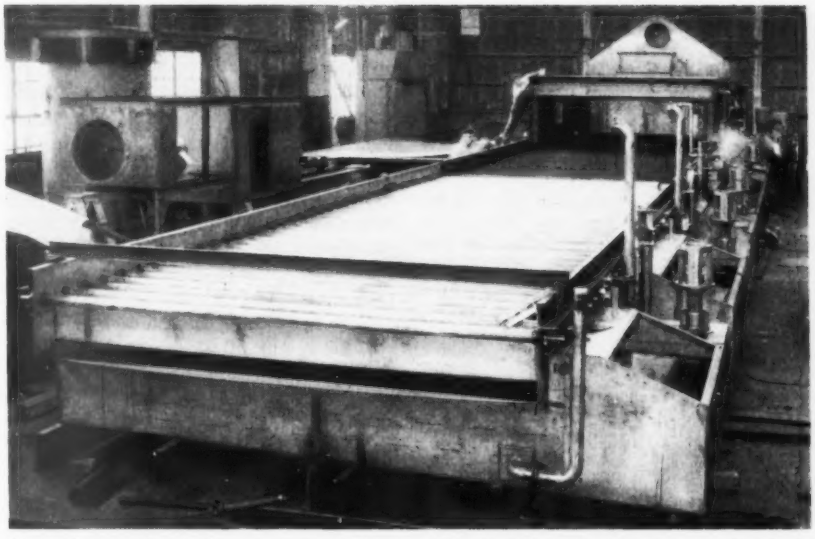
Howard Refrigerator Co., Inc. has announced the completion of their new factory and general office building as the first step in a $1.5 million expansion program.

The new building is located on a six-acre tract in the Greater Northeast Philadelphia Airport Industrial Development. Operations of two present plants in Philadelphia will be consolidated in the new quarters.

New Method For Spalling Resistance Of Porcelain Enamel

ASTM Committee C-22 on Porcelain Enamel has completed a method to determine the spalling resistance of porcelain enamel on aluminum. This method is based on immersion of coated panels in an ammonium chloride solution. There has been no authenticated case in which specimens have passed this test and then failed in service. A method to determine the thermal stress and strain produced by porcelain enamel in metal substrates is under development. An enameled strip of steel acts like a bimetallic thermostat, and a differential transformer is used to measure the specimen deflection. In this manner, the stress behavior of various combinations of enamel coatings and base metals can be determined. This method may also be used to study the

World's Largest Pickling Machine



Shown is a portion of the new metal pickling machine Metalwash Machinery Corp., Elizabeth, N. J. is building for the Norge Div., Borg-Warner Corp., to be installed in the new Fort Smith, Ark. plant. Metalwash states that this will be the world's largest metal pickling machine measuring 200 feet in length and 15 feet in width, for cleaning prior to porcelain enameling.

turn to von weise

Fractional H.P. Gearmotors for Every Purpose



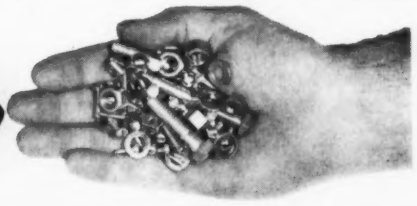
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differential thermal expansion behavior of dissimilar metals bonded together by ceramic adhesives. The next meeting of Committee C-22 will be held in Cleveland, Ohio in September, 1961.

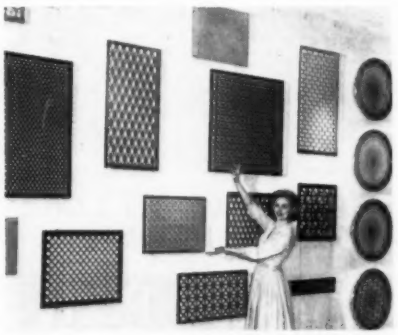
Bowman to Become Manufacturer's Representative

William E. Bowman has announced the formation of a new manufacturer's representative firm. Bowman has for the past two years been associated with Mills Products, Inc. and, prior to that, was with Robertshaw-Fulton Controls Co., handling sales in the Midwest for three divisions. He is currently located at Orchard Lake, Mich.

Perforated Products on Display

Harrington & King Perforating Co., Inc., Chicago, has introduced a new approach to the marketing of semi-finished decorative appliance, architectural and automotive metal parts with the opening of a "perforated products display building" at 5637 W. Roosevelt Rd., Chicago.

Specially designed to exhibit decorative patterns and applications of perforated metal components, the display building was officially opened to product engineers, designers, stylists and architects recently by Judson E. Fuller, president of the firm.



Here is a portion of new display building recently opened by Harrington & King to exhibit perforated patterns, materials and applications to engineers, designers, stylists and architects.

Glidden Creates New Division

Creation of a fourth major division of The Glidden Co. has been announced by Dwight P. Joyce, chairman and president. A. D. Duncan, vice president of the company and general manager of the Paint Div., has been appointed head of the new division.

Joyce said the new division will be responsible for "all activities of our company outside the United States and Canada." Paul W. Neidhardt, former vice president-operations for the Paint Div., succeeds Duncan as head of that division.

Steel Service Center Shipments Up Ten Percent

Shipments from steel service centers for the first quarter of 1961 will be upwards of 10 percent over the fourth quarter of 1960, according to a survey of business conditions just completed by members of the Executive Committee of the Steel Service Center Institute. "March sales, calculated on an average daily basis, will be better than any month since the third quarter of last year," said Robert G. Welch, executive vice president of the Institute. "Although sales are still at moderate levels, this turnaround in shipments is encouraging," he continued. Committee members reported that industry shipments declined steadily throughout 1960 and reached a low point in December, and that the recent increase in shipments reported from the West Coast is moderately above that shown by the rest of the nation.

Gas Engineers to Meet

The Midwest Chapter of the Gas Appliance Engineers Society will meet May 10 at the Mickelberry Restaurant, Chicago Heights, Ill.

James C. Griffiths, senior resident engineer for the American Gas Association, will discuss a field survey which AGA made on ignition systems.

New COMPACT airless spraying outfit

...an "extra" man for your odd jobs around the shop

New, economy model airless outfit . . . small enough to carry anywhere in the plant . . . large enough for a variety of maintenance jobs. Apply paint with minimum overspray, maximum coverage . . . paint goes where you want it . . . on the surface, not into the air. Result: considerable material savings.

All metal surfaces of the airless outfit, exposed to spraying materials, are tough, non-corrosive stainless steel . . . ideal for indoor or outdoor use.

See your distributor about the new compact Binks Airless . . . or write for Bulletin A98-11.



Ask about the Binks spray painting school. Open to all . . . NO TUITION . . . covers all phases.

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Binks Manufacturing Company 3126 Carroll Avenue, Chicago 12, Ill.

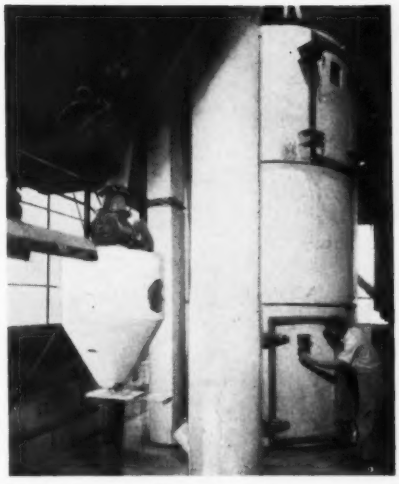
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J. & H. Purchases The Fred Goat Co.

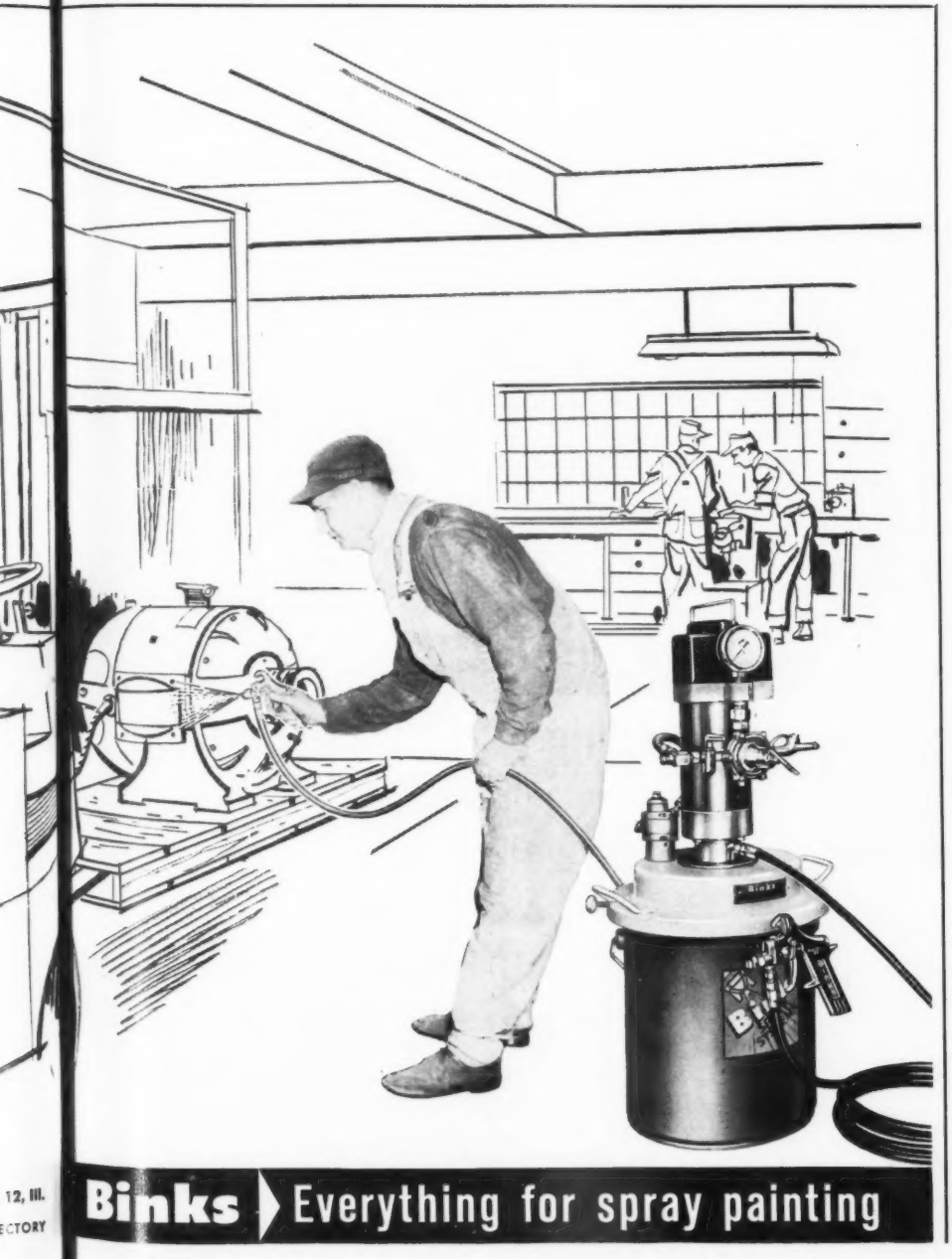
Johnson & Hoffman Mfg. Corp., Mineola, N. Y., a manufacturer of precision stampings and deep drawn parts, has purchased the inventory, machinery and equipment of the Stamping Div. of The Fred Goat Co., Inc., 314 Dean St., Brooklyn, N. Y. Renamed the Brooklyn Div. of Johnson & Hoffman Manufacturing Corp., the newly-acquired facility extends Johnson & Hoffman's size range into larger and heavier parts. Walter D. Gibbs, who was general manager of The Fred Goat Co., has been appointed general manager of the Brooklyn Div. and William G. Condon will be in charge of sales and service.

American Refractories to Produce Grinding Balls

American Refractories and Crucible Corp. officials have announced that their North Haven, Conn. facilities now are equipped for production of a new line of "Starrlum" high density grinding balls. The introduction of the company into the field of grinding media marks a new policy of expansion through diversification. Focal point of the plant expansion is a seven-foot-diameter ceramics spray dryer, engineered and fabricated by Bowen Engineering Inc., North Branch, N. J. According to ARCC, it makes possible the manufacture of the isostatically pressed balls by drying 70 percent solids



high alumina slip to less than one-tenth of one percent moisture content at time of discharge from the dryer as easily-pressed solid spheroids.



Japanese Businessmen Visit U.S. on Economic Mission

Seven leaders in Japanese finance, business and industry recently visited the United States to survey and discuss economic and trade problems involving the two countries.

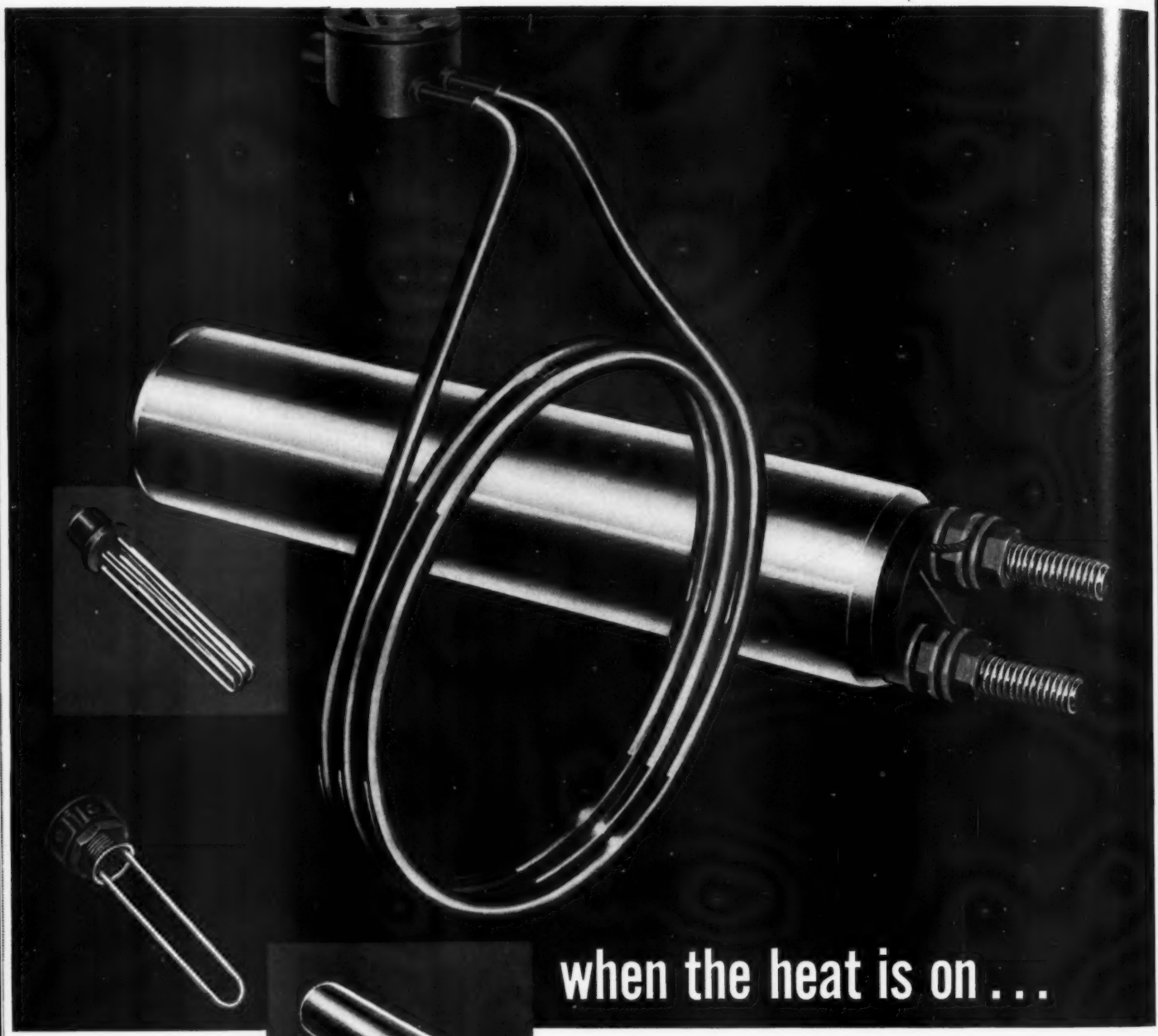
The Economic Mission, which was sponsored by the Japanese government, visited San Francisco, Los Angeles, Chicago, New York, Philadelphia and Washington, D.C., where the group met with President Kennedy and other administration officials.

Members of the Mission held a press conference in Chicago, at which Kiichiro Satoh, leader of the Mission, expressed hope that trade between the two countries would increase. "Japan has undergone dynamic economic expansion during the 50's," he said, "and fully intends to progress with large steps during the 'Golden Sixties.'"

Pointing out that the United States has been the biggest market for Japan, while Japan has been the largest overseas customer for Americans, he said the opening of the St. Lawrence Seaway promises an even greater flow of commerce between the two countries.

"It is expected that the Japanese import of raw materials, machinery and other items from the United States will at least double in the next decade as we are embarking on our 'double national income' ten-year program," Satoh added.

The Mission expressed concern with what they called "private moves designed to restrain trade between the countries. These so-called direct-action movements, such as boycotts by labor unions, seem to be in direct contradiction of your na-



when the heat is on . . .

outstanding performance by

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STAINLESS STRIP STEEL

Superior Stainless, chosen for exacting applications by Edwin L. Wiegand Company, Pittsburgh, Pa., serves this leading manufacturer of domestic and industrial heating units with every desired advantage. Corrosion resistance, strength, uniform ease of fabrication and surface finishing are matched with dependable Superior service the year around. • Call us for technical assistance and quotations on your own stainless strip applications without obligation.

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tional policy as envisaged by the new administration to adhere to international free trade in the interest of the free-world economy," Satoh said.

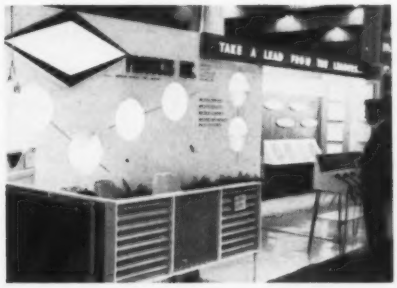
He added that Japan is not planning retaliatory action against the "boycotts."

12th Western Metal Exposition and Congress

Close to 24,000 metalworking plant executives, engineers, production, purchasing and sales personnel attended the March 20-24 Western Metal Exposition and Congress in Los Angeles.

More than 125 papers were presented at concurrent technical sessions by American Society for Metals, Society for Nondestructive Testing, American Institute of Mining, Metallurgical and Petroleum Engineers, Society of Aerospace Material and Process Engineers, and American Society for Testing Materials.

One of the new features of the show was ASM's new combination badge-inquiry cards, which are similar to charge-account "credit plates." The cards speeded up requests for product information by allowing visitors' names and addresses to be stamped directly on inquiry forms.



Amchem Products, Inc., exhibited its line of metal treatment products in attractive booth.



Representative of DeVilbiss Co. explains firm's spray equipment to exposition visitors.

MPM PHOTOS



Conversion coating for porcelain enameling aluminum was a feature of Turco's booth.

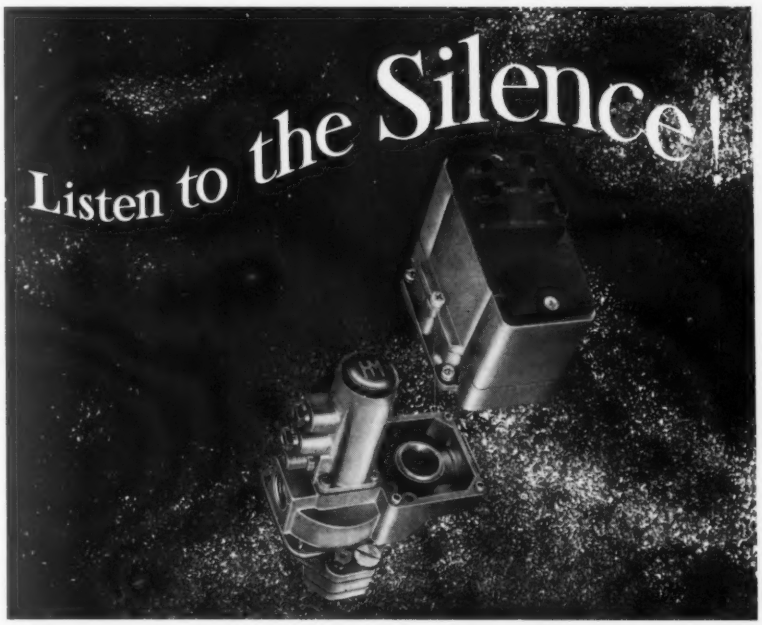


Kerns Pacific Corp. personnel discuss firm's line of products with Metal Show visitor.

First Western NEMA Conference

The National Electrical Manufacturers Association will hold it first Western Conference at The Biltmore Hotel, Los Angeles, Calif., on June 8-9.

The conference is planned primarily for member companies located in states west of the Rocky Mountains and for western representatives of members headquartered in other sections of the coun-



For your gas appliances, Thermac now provides a completely silent solenoid operator for a full range of Thermac Gas Controls!

This new development—exclusively from Thermac—provides for smooth, controlled and silent ignition of gas furnaces, space heaters, hot water units . . . combined with the positive action of solenoid operation. With this new operator, you can now offer your customers completely automatic gas control in a range of Thermac units to meet every requirement for size, capacity and type of control desired. And . . . you can now provide them with the added selling feature of absolutely quiet operation!

Certified by A.G.A.

Thermac's silent operator is another important step ahead in gas control. Find out—today—how Thermac controls give you the most for your money . . . in service-free performance, quality at low cost . . . and the features your customers want in modern gas control. There is a Thermac Control size and type incorporating the new silent operator to suit *your* appliance requirements exactly. Write for details, and ask for test samples!

THERMAC HM COMPANY

"28 years' experience building gas controls"

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try. However, representatives of all member companies will be invited to attend.

Preliminary plans call for starting the conference with a luncheon on June 8 to which all sales allies of electrical manufacturers will be invited. A top industry executive will keynote the conference at luncheon at which A. D. R. Fraser, president of NEMA and president of Rome Cable Div., Aluminum Co. of America, will preside.

In addition to the two-day main conference, plans also are being made for several group meetings, including a possible public relations luncheon and special sessions for manufacturers of electric house heating equipment, lighting equipment and appliances. These meetings are planned for June 7 and the morning of June 8.

Speedster, Inc. Purchased

In its fifth merger action within the past eight months, Dorsett Electronics, Inc., Norman, Okla., has acquired all the outstanding shares of Speedster, Inc., Denver manufacturer of special purpose industrial heating elements and devices, institutional electric cooking equipment, and short run metal stampings. The transaction involved an exchange of shares and a cash payment, according to Loyd G. Dorsett, president of the Norman electronics firm. The Denver firm will operate as the Speedster Products Div. John R. Kauffman, founder of the firm, will continue as president of Speedster. No management changes are contemplated. Construction of a new plant for the Speedster Products Div. will begin soon in the Foothills Industrial Park, between Denver and Golden. It will be located adjacent to recently completed facilities of Dorsett's Electronic Controls Div.

Caloric Reports Record Sales

Caloric Appliance Corp.'s sales during March were at the highest level in the gas appliance firm's 71-year history, according to LeRoy Klein, vice president. Although no specific unit or dollar figures were announced, Klein said March sales were 18-percent higher than the comparable month in 1960, which also showed sales at a record level.

Enamelers Hold Maypole Party

The Midwest Enamelers Club has announced plans for its annual Maypole Party. The event will be held May 19 at Lincolnshire Country Club, Crete, Ill. The program includes a golf tournament and a dinner at 6:30 pm.

Enamel Division of ACS To Broaden its Scope

The Enamel Div. of the American Ceramic Society has added a fall meeting to its schedule for the purpose of planning an expansion of its scope and services.

Division Chairman Hollis Saunders, Phelps Dodge Copper Products Corp., said the new fields of interest could in-

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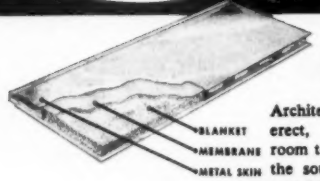
New Reader Service

Be sure you take advantage of the Reader Service program recently introduced by MPM. In order to make it easier for readers to quickly obtain additional information from advertisers, complete details on new products and copies of new literature, each issue of MPM now contains postage-paid Reader Service cards.

All you do is place the Reader Service card in the mail. Upon receipt, IBM equipment will be employed to provide the fastest possible service on all inquiries.

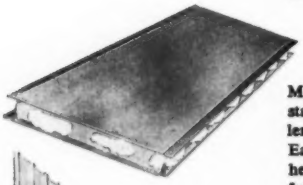
You will find this month's reader service cards on pages 23 & 24.

KOCH STRUCTURAL PANELS



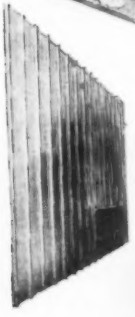
ACOUSTICAL

Architectural metal sections, easy to erect, provide a sound-controlled room to insulate the silence — isolate the sound. Resistant to fumes, dirt, vermin, fire. Highly efficient thermal-acoustical properties.



OVEN

Modular, interlocking panels are standard widths in a variety of lengths to build ovens of any size. Easy, inexpensive to install. Walls of heavy gauge sheet metal. Insulation four inches thick.



SIDING

Koch Standing Seam Siding is used for partitions or enclosures indoors or out. Manufactured in standard widths and a variety of lengths, either galvanized or black iron. Easily assembled and locked into position.

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We have a truly challenging opening for a capable Ceramic Engineer who will be responsible for our newly-created Ceramic Department.

This creative engineering position offers affiliation with a leading and expanding Wisconsin automotive hard parts manufacturer with multi-plant operations.

The position demands a knowledge of milling operations plus a familiarity with standard test methods for porcelain enamel. Man selected will also be required to develop new coatings, methods of application and processes.

Excellent growth opportunity with attractive salary and fringe benefits.

Send detailed resumé to Box 5A

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York Street at Park Avenue
Elmhurst, Illinois

METAL PRODUCTS STATISTICS

		1961 (Units)	1960 (Units)	% Change
Gas Furnaces	Feb.	60,100	59,200	+ 1.5
	Jan.-Feb.	119,700	118,900	+ 0.7
Gas Boilers	Feb.	8,314	8,255	+ 0.7
	Jan.-Feb.	17,101	15,076	+13.4
Gas Conversion Burners	Feb.	5,400	8,200	- 34.1
	Jan.-Feb.	11,800	15,300	- 22.9
Oil-Fired Central Heating Equipment	Jan.	41,309	46,113	- 10.4
Gas Ranges, Free-Standing	Feb.	102,800	136,000	- 24.4
	Jan.-Feb.	197,400	246,900	- 20.0
Gas Ranges, Built-In	Feb.	22,000	23,500	- 6.4
	Jan.-Feb.	42,600	46,100	- 7.6
Gas Water Heaters	Feb.	206,700	214,800	- 3.8
	Jan.-Feb.	433,700	430,300	+ 0.8
Gas Vented Recessed Wall Heaters	Feb.	20,500	24,400	- 16.0
	Jan.-Feb.	48,100	51,100	- 5.9
Gas Floor Furnaces	Feb.	3,700	4,100	- 9.8
	Jan.-Feb.	8,200	7,800	+ 5.1
Gas Direct Heating Equipment	Feb.	38,800	45,200	- 14.2
	Jan.-Feb.	77,100	86,700	- 11.1
Gas Unit Heaters & Duct Furnaces	Feb.	13,500	14,100	- 4.3
	Jan.-Feb.	25,400	26,900	- 5.6
Gas Incinerators	Feb.	4,000	4,400	- 9.1
	Jan.-Feb.	7,600	7,700	- 1.3
Electric Household Refrigerators	Feb.	239,000	302,400	- 21.1
	Jan.-Feb.	464,700	569,100	- 18.4
Electric Farm & Home Freezers	Feb.	68,400	97,400	- 29.8
	Jan.-Feb.	126,500	150,600	- 16.0
Electric Ranges, Free-Standing	Feb.	74,900	83,500	- 10.3
	Jan.-Feb.	146,000	152,400	- 4.2
Electric Ranges, Built-In	Feb.	53,200	59,700	- 10.9
	Jan.-Feb.	91,500	105,800	- 14.2
Electric Water Heaters	Feb.	60,300	60,500	- 0.3
	Jan.-Feb.	112,800	109,200	+ 3.2
Electric Dishwashers	Feb.	38,900	46,000	- 15.4
	Jan.-Feb.	79,700	83,200	- 4.2
Electric Food Waste Disposers	Feb.	50,400	56,300	- 10.5
	Jan.-Feb.	106,300	108,100	- 1.7
Combination Washer-Dryers	Feb.	6,034	16,381	- 63.0
	Jan.-Feb.	12,417	30,345	- 59.0
Washers—Automatic & Semi.	Feb.	182,020	222,463	- 19.0
	Jan.-Feb.	369,072	425,406	- 13.0
Washers—Wringer & All Other	Feb.	45,542	61,177	- 25.0
	Jan.-Feb.	87,409	112,799	- 24.0
Electric Dryers	Feb.	52,869	69,898	- 24.0
	Jan.-Feb.	119,059	144,075	- 18.0
Gas Dryers	Feb.	28,471	38,469	- 26.0
	Jan.-Feb.	65,439	75,895	- 14.0
Vacuum Cleaners	Feb.	257,930	294,483	- 12.4
	Jan.-Feb.	500,445	552,813	- 9.5
†Television	Feb.	444,418	503,453	- 11.7
	Jan.-Feb.	812,353	1,029,947	- 21.8
†Radio (1)	Feb.	1,115,029	1,142,368	- 2.4
	Jan.-Feb.	2,205,102	2,798,156	- 2.2
Typewriters	Jan.	78,225	*	*
Room Air Conditioners	Feb.	206,800	*	*
	Jan.-Feb.	304,500	*	*
Steel Barrels & Drums	Jan.	2,394,784	2,568,299	- 6.8
Steel Pails	Jan.	4,910,272	5,376,852	- 8.7

(1) Including auto receivers

* Not reported † Output — all other figures are factory shipments or factory sales

Sources for this information: Gas Appliance Manufacturers Association, National Electrical Manufacturers Association, American Home Laundry Manufacturers Association, Vacuum Cleaner Manufacturers Association, National Association of Furniture Manufacturers, Electronic Industries Association, Air-Conditioning and Refrigeration Institute, and U.S. Dept. of Commerce.

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8 types for all applications. Diameters from 6" through 48".

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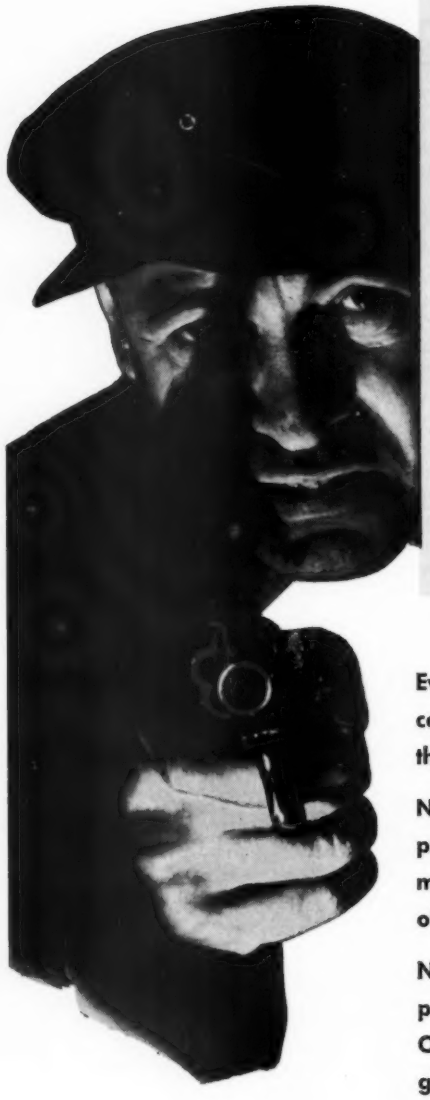
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Northwest's Cleaning Specialists offer a complete line of top quality products for every "surface readying" requirement, on every type of material. These products have *proved* their dependability over years of rugged production use in the country's finest finishing operations.

Northwest's continuing research and development program keeps our products well ahead of industry's constantly changing requirements. Our fine staff of thoroughly experienced Cleaning Specialists will gladly help you work out the best surface preparation for your product and "stand by" to help you keep it functioning at top efficiency.

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CHEMICAL PRODUCTS DIVISION • CHEMETRON CORPORATION

Circle No. 349 on Reader Service Card.

MPM

new industrial literature

STRIP-COATING FOLDER

Zegers, Inc. has made available this folder which describes their new process of strip-coating and their new plant. It is claimed that this new process gives steel and aluminum strip the finest protection and decoration and that the coated strip will not mar when stamped, formed, or drawn. Coating selections include: vinyls, alkyds, epoxies, acrylics, plastisols and organisols. The recently completed plant is said to have the latest facilities including equipment for continuous coating and slitting in order to provide uniformity and economy.

Circle No. 115 on Reader Service Card.

METALWORKING EQUIPMENT CATALOG

A new 32-page complete line catalog giving detailed information and costs on all the company's metalworking equipment has been announced by the Di-Acro Corp. Called catalog No. 61, all hand and power operated machines are shown. Additional pages list related accessories and expendables including single station punches and dies, adjustable punches and dies, standard V-type press brake dies, and rol-form and snap-form dies. The new catalog begins with a selector guide and index which provides a means of quick reference. Complete information on engineering services, warranty agreement and location of dealer organizations is also given.

Circle No. 116 on Reader Service Card.

GENERAL PURPOSE RELAYS

New data sheet on a line of general purpose relays has just been published by Line Electric Co. Bulletin 10 notes that the Series MK is available for open, plug-in or printed circuit applications. All types are offered in standard contact arrangements up to 3PDT. Detailed coil data and contact nomenclature are provided in two tabular presentations. Manufacturer notes that this relay is designed to pass a 1000 volt ac Hipot test between all elements. All will operate continuously in ambient temperatures of —45° C to 75° C for dc coils and —45° C to 55° C for ac coils.

Circle No. 117 on Reader Service Card.

FASTENERS AND CORROSION RESISTANCE

Various kinds of corrosion and the different metals suited to resist them are given a thorough review in a 24-page illustrated brochure by the H. M. Harper Co. Written to help manufacturers build corrosion resistance into their products and properties, the guide analyzes the seven basic types of corrosion and shows what specific kinds of metals best resist them. These include brass, naval bronze, silicon bronze, nickel and high-nickel alloys, stainless steels, aluminum, copper, monel metals and high temperature alloys.

A corrosion guide chart lists 136 types of corrosive agents that engineers and maintenance people may be troubled by and shows how well each of eight types of metals resist each of these agents. The chart shows, for example, that brass and naval bronze are "no good" for resisting potassium hydroxide and that silicon bronze offers "fair" resistance, but that monel metal and eight basic types of stainless steel are "excellent" for resisting this agent. Another chart, particularly valuable for specifying metal fasteners, is a cross index of chemically equivalent specifications of metal fasteners.

Circle No. 118 on Reader Service Card.

PLATING BRIGHTENERS AND SOLUTIONS

Nickel, zinc and cadmium brighteners for efficient and economical bright still or barrel plating are described in this series of four technical booklets by the Chemical Div., The Meaker Co., subsidiary of Sel-Rex Corp. Details on economical production of brilliant deposits directly from the bath, maximum throwing power, and elimination of subsequent bright dips are given for each process in the series. Also shown are: bath composition; operating data and instructions; maintenance; consumption figures; and special notes peculiar to the particular process.

Circle No. 119 on Reader Service Card.

INSERTS FOR ELECTRICAL CONNECTIONS

How a threaded "Clinch Insert" is used to form electrical connections, while providing permanent brass threads in plastics (after molding) and other soft parent materials, is described in bulletin P-102 issued by the Phelps Mfg. Div., Heli-Coil Corp. The bulletin explains how an electrical terminal can be attached securely to the insert by crimping the insert eyelet over the terminal. A special flange on the insert permits the eyelet to remain above the surface of the material for crimping. Outside lead wires can be attached to the terminal with a standard binding screw. The Clinch Insert is locked into the plastic by pushing down a spreader, which expands the knurled walls of the insert into the plastic.

Circle No. 120 on Reader Service Card.

METHOD OF SPOTLESS DRYING

Information concerning the newly patented Trisec process, developed abroad by Imperial Chemical Industries, Ltd., is available in Bulletin 24 from the Phillips Mfg. Co., who have been granted the distributing, use and manufacturing rights in the United States. Trisec is a special drying solvent containing trichlorethylene and is especially ideal for spot-free drying of intricately shaped parts with cracks and crevices after electroplating, phosphating, chromating, electropolishing, contour etching, acid pickling, bright dipping and alkaline de-rusting.

Circle No. 121 on Reader Service Card.

WIRE BASKET BULLETIN

New eight-page Bulletin B-10 on woven wire baskets for degreasing, dipping, heat treating, plating, pickling, ultrasonic or chemical cleaning, quenching and toting is available from Newark Wire Cloth Co. The bulletin includes illustrations of all standard basket types and detailed specifications on the wire.

Circle No. 122 on Reader Service Card.

For further information on New Industrial Literature, use Reader Service Card on pages 23 & 24

CLINCH NUTS

Grip Nut Co. has released a catalog describing their line of Gripco clinch nuts. The manufacturer states that their clinch nuts are excellent for fixed fastening or hard to reach assemblies. They can be clinched solid for a rigid application, or staked in with a six point staking punch for a floating effect. They are available with or without self-locking threads.

Circle No. 123 on Reader Service Card.

TWIN FLOW INDUSTRIAL OVENS

Twin recirculation, an oven principle that it is claimed provides uniform heat from all sides under full load conditions, sharply reduces heat-up time, and eliminates rejects due to faulty heat processing is described in bulletin No. 960 released by Ramco Equipment Corp. Cross-sectional drawings show how all-around heat penetration of material is achieved, with minimum temperature differential and elimination of heat pockets and stagnant spots. Also described in detail are the company's designs in heaters, insulation, thermostatic controls, electrical control panels, exhaust, safety provisions and material handling equipment. Charts and photographs give physical and performance data of standard and specialized units.

Circle No. 124 on Reader Service Card.

NEW COMPLETE STAMPED GEAR CATALOG

Winzeler Mfg. & Tool Co. has just issued a new 16-page catalog covering their broad line of stamped gears. In addition to illustrating and describing the various gear types available, detailed tables are provided giving all critical specifications for hundreds of sizes of stamped gears, segments, internals, ring gears, crown gears, sprockets and ratchets which can be supplied from stock dies. Further data is included on center hole shapes, tooth parts, and diametral pitch rules and formulae for spur gears.

Circle No. 125 on Reader Service Card.

FRACTIONAL HORSEPOWER MOTORS

Molon Motor and Coil Corp. has made available descriptive literature describing their line of fractional horsepower motors, both skeleton types and gear motors. The company states that they specialize in custom manufacturing of all types of fractional horsepower motors.

Circle No. 126 on Reader Service Card.

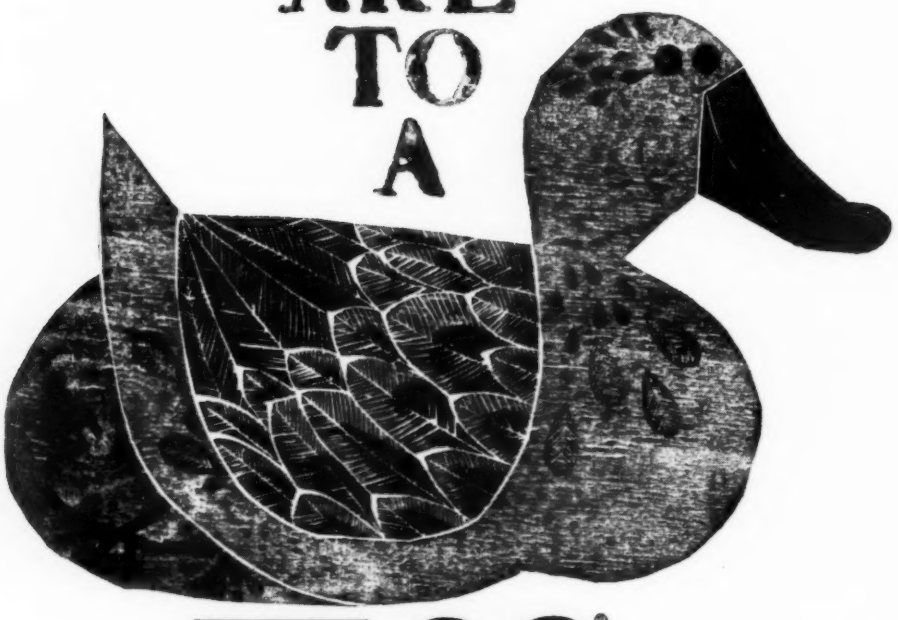
OBI PRESSES

Bulletin 15 published by the Minster Machine Co. points out some of the features of their line of OBI presses. Included is information to help you make comparisons between presses.

Circle No. 127 on Reader Service Card.

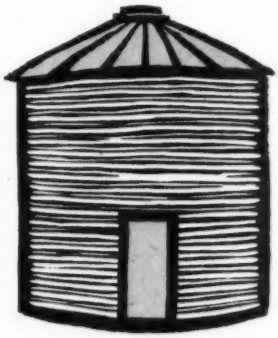
MORE NEW LITERATURE ON PAGE 83 →

WHAT FEATHERS ARE TO A



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on the farm, and wherever **protection** against corrosion is required.

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Circle No. 331 on Reader Service Card.

New literature

→ FROM PAGE 81

AUTOMATION FOR METAL FINISHERS

A wide range of machines and equipment designed to automate metal finishing operations is described in a fully illustrated 29-page "Guide," published by The Meaker Co., subsidiary of Sel-Rex Corp. Featuring photographs of actual installations — including the world's largest electro-plating facility — the new booklet provides profit-increasing data for large or small firms contemplating automation.

Circle No. 128 on Reader Service Card.

STAMPING AND DIES

Kalamazoo Stamping & Die Co. has produced a new folder describing the firm's operations in the stamping and die field. Prepared in three colors, the folder includes many photos of die making and production equipment in operation, along with a complete listing of toolroom and production equipment. It also shows a wide variety of stampings processed by the firm in the past.

Circle No. 129 on Reader Service Card.

ONE-OPERATION CLEAN AND PHOSPHATIZE

A new product is described in literature issued by The Diversey Corp. It is claimed that Diverfos F-72 has exceptional detergent action which removes most soils; leaves surfaces with a uniform, tightly-bonded iron-phosphate coating. The company states that the complete cleaning reduces spotting and uneven coating to a minimum and eliminates the need for additional coating steps.

Circle No. 130 on Reader Service Card.

ZINC AND ALUMINUM CASTINGS

Falconer Metal Specialties, designers and manufacturers of zinc and aluminum castings, has recently published a brochure on their organization. The 12-page brochure explains in detail the function and operational techniques of the organization. The reader is given a pictorial tour through the facilities of the company showing the complete engineering and design departments and the specialized machinery utilized by the concern. A special section of the brochure is devoted to some typical case histories.

Circle No. 131 on Reader Service Card.

STAMPED PRODUCTS BULLETIN

A six-page bulletin issued by Principal Mfg. Corp. summarizes the company's work in the metal stamping field and illustrates many of the parts which it produces.

Among the fields in which the firm specializes, according to the bulletin, are appliances, radio and television, data processing, photographic equipment and electrical components. In addition to illustrating some of the typical stamped parts produced, the bulletin describes the production and engineering facilities available in the plant.

Circle No. 132 on Reader Service Card.

SELF-LOCKING SWAGE NUT

A new bulletin available from Standard Pressed Steel Co. reviews a self-locking swage nut, half the weight of comparable



To Keller Manufacturing Co., Inc., it means a savings of nearly $50 a day in finishing costs on leaf rakes. And, theirs is a comparatively small plant operation.

Before moving into their new plant, this St. Louis manufacturer of Sweep-Easy lawn and garden tools investigated and tried out various finishing equipment. They chose Ransburg No. 2 Process to do the job because they found that only the Ransburg Electrostatic Hand Gun could give them the desirable increase in production—with improved quality—and at lower cost.

PRODUCTION IS NEARLY DOUBLED
QUALITY OF FINISH IS IMPROVED

With the Ransburg Hand Gun, Keller's daily painting prodution of leaf rakes nearly doubled what they were formerly getting with air hand spray. And, where they used to get only 168 rakes per gallon of paint, they now get 426 per gallon—over 2½ times as many—actually *an increase of over* 150% *in paint mileage.* With the unique "wrap-around" feature, electrostatic is improving the quality, providing a complete, uniform coating over all areas—even on the tine edges.

NO REASON WHY YOU CAN'T DO IT, TOO!

See how the Ransburg Electrostatic Hand Gun can save time . . . paint . . . and cut costs in YOUR finishing department. Or, if your production justifies, it'll pay you to investigate Ransburg's automatic electrostatic spray painting equipment. Write for our No. 2 Process brochure which shows numerous examples of modern production painting in both large and small plants.

RANSBURG

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Affiliates in AUSTRALIA • AUSTRIA • BELGIUM • DENMARK • ENGLAND • FRANCE • FINLAND • GERMANY HOLLAND • ITALY • NORWAY • SPAIN • SWEDEN • BRAZIL • SOUTH AFRICA and NEW ZEALAND

Circle No. 355 on Reader Service Card.



PERMA-GRIP® Handles

• distinctive • convenient • standard production prices

Twelve standard models are offered and six standard patterns are available on any model handle. All handles have plastic spaces which serve as a thermo-break. If you wish, consult with our engineering department regarding special custom requirements.

We have the skilled personnel, the specialized equipment, and we use the right materials to assure a reliable source for quality PERMA-GRIP handles. Let our specialized production line serve as a part of your sub-assembly facilities.



This range produced by Eagle Range & Mfg. Co. is attractively designed to incorporate the use of Perma-Grip handles.

MILLS PRODUCTS INCORPORATED

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THIS IS A GENUINE CLEAR VISION PERMA-VIEW PATENTED NON-FOG WINDOW

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fasteners and designed for fast, economical installation in thin metals, including steels of hardness up to Rockwell C27. The illustrated four-page folder provides detailed specification, installation and performance information, including dimensional data for the single installation tool. The nut is a companion to an earlier plain (non-locking) swage nut. The new self-locking version has a positive three-point (non-slotted) locking collar, explained in the literature, that holds the mating bolt securely wherever wrenching stops. The high-strength all metal fastener, designed to meet military locknut specifications, is rated for screw loads up to 160,000 pounds per square inch tensile strength.

Circle No. 133 on Reader Service Card.

NICKEL AND CHROMIUM IN PLATING

This eight-page booklet available from The International Nickel Co., Inc. reviews some observation of the corrosion behavior of various decorative plating systems and presents some opinion as to the reasons for the behavior difference noted.

Circle No. 134 on Reader Service Card.

MOTODRIVE CATALOG

Catalog G-100, an 88-page publication covering the complete line of Reeves Vari-Speed Moto-drives, ¼ through 40 hp, is available from Reliance Electric & Engineering Co. Data in the catalog includes full rating tables, with new additional output speeds. Dimension diagrams and charts for over 100 different assemblies, new higher overhung load and new controls, are also contained in this new catalog. A Reeves Vari-Speed Motodrive is a self-contained variable speed drive unit. It includes an ac motor, variable pitch pulleys, and a gear reduction unit, when specified, in a single compact housing.

Circle No. 135 on Reader Service Card.

ELECTRIC ARC GUN

Beeco Mfg. Corp., manufacturers of electric arc guns which serve as a spot welder, stud welder, tack welder, button welder, hole burner and riveter, has released a circular describing the various applications, construction and design features and other details pertinent to the electric arc guns. Included in the circular are illustrations of the gun and the various nozzle attachments available for specific applications.

Circle No. 136 on Reader Service Card.

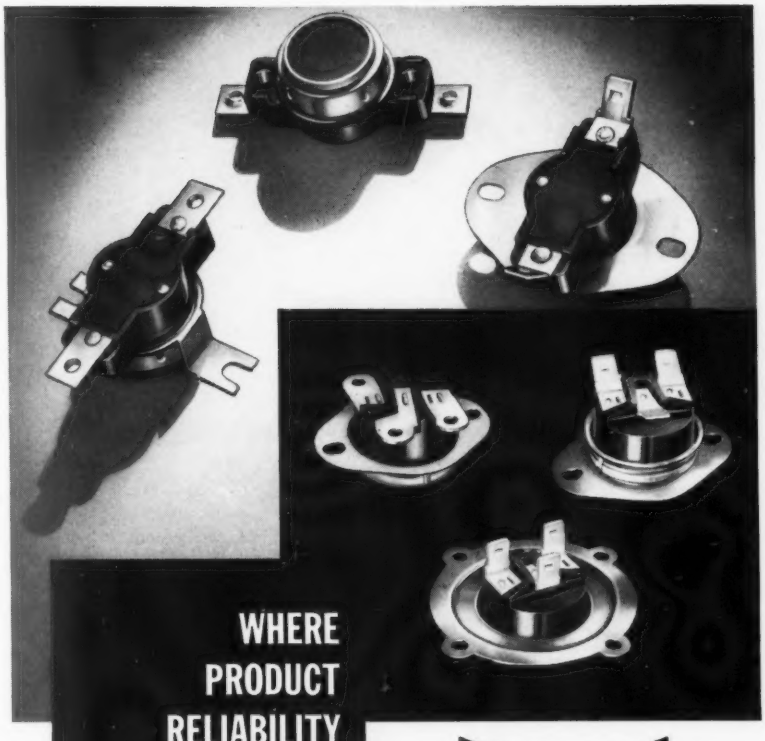
FINISHING SYSTEMS

A bulletin showing typical finishing system applications and specifications is offered by Michigan Oven Co. In addition to showing complete systems, examples of individual pieces of equipment such as washing machines, phosphatizing units, dry-off ovens, dip tanks, spray booths, flowcoaters and finishing ovens are included.

Circle No. 137 on Reader Service Card.

TROLLEY CONVEYORS

What a trolley conveyor can do to reduce manufacturing and handling costs — and how to select the right trolley conveyor for any requirement — these are the two main topics of a new 58-page book, 2730, "Trolley Conveyors," just issued by Link-Belt Co. Examples of many installations — from small, relatively simple jobs up to the most



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KLIXON®
DISC TYPE THERMOSTATS

Give Your New Models Added Dependability That Keeps Customers Sold

Actuated by the scientifically calibrated Spencer disc, KLIXON fixed temperature thermostats "snap" the circuit open with a clean, quick break . . . "snap" it closed with a solid make. And because they have no complicated parts with knife edges or toggles, their accurate performance is unaffected by shock, vibration, altitude or cross ambients regardless of the mounting position. The result . . . dependable day-in day-out performance that helps assure greater product reliability.

KLIXON 20400 and 20600 series disc type thermostats are ideal for application as fan switches and limit controls in electric clothes dryers, appliances, heating equipment, industrial and commercial apparatus. Their relatively small size makes them suitable for use where space is limited. They have heavy duty electrical capacity . . . up to 25 amps., 120 and 240 VAC resistive. U/L approved for 100,000 cycles. KLIXON disc type thermostats are available with bottom or surface mountings . . . screw or quick connect terminals.

These KLIXON thermostats are available in automatic or manual reset types. Our field engineers will gladly help you make test applications. Write for technical data bulletins THSN-19, THSN-23, which give complete performance characteristics, temperature setting information and dimensions.

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fractional horsepower
Motors
Skeleton Types • Gear Types



We specialize in custom manufacturing all kinds of fhp motors. Whether you need skeleton types or gearmotors, standard or special, Molon can supply them fast and at low cost. Send for free descriptive circulars.

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PURCHASERS
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PRE-ENAMELED
ALUMINUM
COIL STRIP!



WIDTHS: ½" to 18"
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COLOR TO YOUR SPECIFICATIONS

Buy pre-painted aluminum coils from a source that can meet any competitive situation! Integrated . . . our aluminum coil strip is made from ingot in our own plant. Treated with Alodine 1200-S before painting. Over 15 years' strip roller-coating experience. Prompt delivery in our fleet of long-haul trucks.

Ask for a quotation on your requirements.

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complex systems found in some of the most highly complex plants — are shown, with combinations of photographs and layout drawings. The book also shows how trolley conveyors aid in many tasks required in modern industry, such as washing, finishing, drying, baking, cooling, assembly, testing and storage. Included is complete information for design of a trolley conveyor system, with appropriate components, supports, superstructures and guards. Complete tables of materials, dimensions, and specifications of components, easy-to-read drawings and cutaway photographs showing construction features are given.

Circle No. 138 on Reader Service Card.

AIRLESS SPRAYING EQUIPMENT

The Binks Mfg. Co. has released Bulletin A98-11 describing a new compact model airless outfit. It is stated that the equipment is small enough to carry anywhere in the plant and yet large enough for a variety of maintenance jobs. The company states that it paints with minimum overspray and maximum coverage resulting in considerable material savings.

Circle No. 139 on Reader Service Card.

VACUUM METALLIZING

"New Developments in Vacuum Metallizing" is a four-page brochure available from Bee Chemical Co. and describing metallizing coatings systems which may be applied by spraying, dipping or flow coating to plastics and metals. Base coats applied before metallizing and top coats and backup coats for use after metallizing are detailed. Thinning information and system properties are also given. The systems guide is in chart form which can be mounted for ready reference.

Circle No. 140 on Reader Service Card.

POWDER METALLURGY

The New Jersey Zinc Co. has issued a booklet entitled "Designing for Pressed Brass and Nickel Silver Metal Powder Parts." It is said to contain complete information about the application, design techniques and properties of metal powder parts.

Circle No. 141 on Reader Service Card.

SELF-LOCKING KAPSCREWS

New literature which describes the Klincher Self-Locking Kapscrew, its design and principle of locking is now available from Klincher Kapscrew, Inc. This self-locking capscrew employs the same locking principle as the company's locknut, namely by deflection of the locking collar which clinches both radially and axially. It is claimed that these fasteners resist ultrasonic vibration, will withstand temperatures to 1600° F and are re-useable indefinitely.

Circle No. 142 on Reader Service Card.

SILICONES IN APPLIANCES

Dow Corning Corp. has released a booklet entitled "Extra Edge for Extra Sales." The booklet tells where and how silicones are being designed into appliances. The company claims that increased usage of silicones results in more efficient and reliable performance and improves the product.

Circle No. 143 on Reader Service Card.

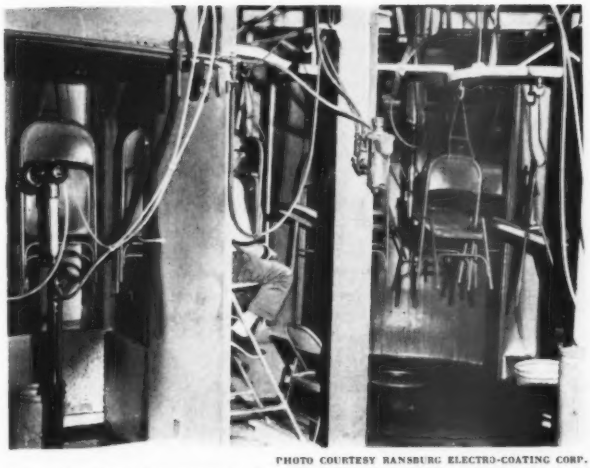


PHOTO COURTESY HANSBURG ELECTRO-COATING CORP.

Upon leaving the second disk station, chairs are folded before entering booth at left. Completely automated painting setup accounts for 33-percent saving in finishing costs over previous method.

Finishing folding furniture

HAMPDEN SPECIALTY PRODUCTS CORP., Easthampton, Mass., manufacturer of folding metal furniture, has the capacity for turning out over 20,000 folding chairs a day in two shifts.

The company's public seating customers include schools, churches, hospitals, clubs, lodges, ships, governmental agencies, and even Churchill Downs Race Track. Other products are bridge tables and chairs, juvenile chairs and tables and a line of outdoor casual furniture.

Sam D. Lockshin, vice president in charge of manufacturing, points out that the company has run the gamut of finishing procedures. During an eight-year period, they went from hand dipping to automatic dipping, to flow coating, to hand spray, and then to electrostatic with hand touchup, and finally to fully automatic electrostatic spray painting.

The company operates three automatic electrostatic lines today: two mass-production lines — primarily for chairs and tables, in the second-floor finishing department—and one miscellaneous line on the floor above for short runs of various components.

Spraying equipment consists of two electrostatic disks and two electrostatic bell atomizers, which are used in conjunction with five auxiliary air guns.

Following a three-stage wash, the chairs to be painted are opened about half way and repositioned on the line for better electrostatic deposition. The conveyor makes a loop around the first ceiling-mounted disk, which paints one side of the chair. A second disk paints the opposite side.

The chairs are then manually folded and the work moves along to a water-wash booth, where the first electrostatic bell atomizer coats the front of the chair. Three electrostatic air guns hit the hard-to-reach areas of the chair seat and back. The work is then indexed automatically, and the back of the chair is painted with two electrostatic air guns and another six-in. bell atomizer. The work is baked for eight minutes at 325 to 350 F.

According to Lockshin, the system has resulted in an overall saving of 33 percent in finishing costs over previous methods. Also, paint consumption has been decreased from 18 to 20 chairs per gallon with hand air spray to 100 chairs per gallon with the present system. MPM



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Circle No. 303 on Reader Service Card.

MPM

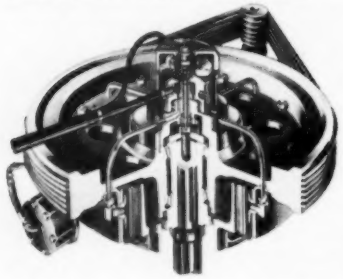
new supplies and equipment

Fluorocarbon Resin

Sheet forms of Teflon TFE-fluorocarbon resin up to eight in. thick and 25 in. square are now available from The Polymer Corp. The sheet was previously supplied by Polymer in sizes up to two-in.-square sections. The sheets are designed to provide fabricating savings and new design possibilities in the electrical, chemical and mechanical industries.

Circle No. 201 on Reader Service Card.

Miniature Air Clutch And Brake



A miniature pneumatic clutch and brake package application for bench presses in the low-tonnage capacity ranges has been introduced by Fawick Airflex Div., Fawick Corp.

Known as FSPA (Fawick Standardized Press Application), the package incorporates a six-inch diameter drum-type air clutch and a four-inch diameter self-energizing brake. The unit is designed for high speed cyclic machines requiring extremely accurate starts and stops. The clutch portion of the package may be used in pulley-mounted applications.

Circle No. 202 on Reader Service Card.

Airless Spray Unit



A low cost five-gallon airless spray unit for one to five-gallon containers has been announced by Gray Co., Inc. The 46-lb "Monark" unit has a large capacity pump with full stroke.

Designed for production work, the unit incorporates an instant-latch cover for fast color changeover and ease in carrying.

The Monark unit can handle anything from protective coatings, water base paints to lacquers — and final finishes when used with the Graco "Golden" Gun and spray tips. It comes equipped with an air-operated agitator.

Circle No. 203 on Reader Service Card.

Line Of Press Brake Dies

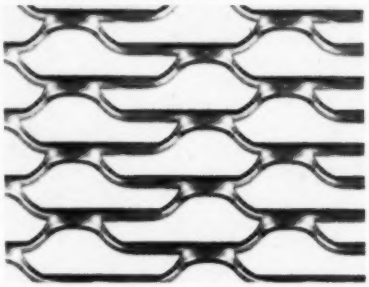
A Tufloy line of press brake dies now available from Niagara Machine & Tool Works features wear resistant surfaces that are said to promise life-long service.

The dies are made of heat treated stress relieved and machine straightened tough alloy steel.

Commonly used 90° and 30° air bend dies, flattening and offset dies, 3 and 4-way dies, and 90° gooseneck punches are stocked in 2, 4, 6, 8, 10 and 12-foot lengths. Average die, with working shut height of 5¼ in, can be used with any standard press brake equipped with die holder and ram adjustment. Special punches and dies are also available.

Circle No. 204 on Reader Service Card.

Expanded Aluminum

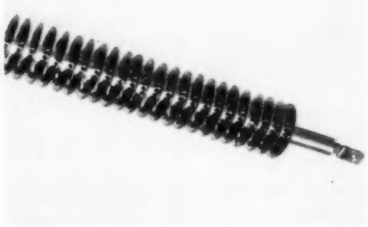


Two new patterns, designated Dutch Hat and Wooden Shoe, are now offered in aluminum by Exmet Corp. Suitable for use in grilles on air conditioners, radio and TV sets, heaters and other household items, the patterns also lend themselves to architectural applications.

The patterns can be finished by porcelain enameling or anodizing in colors if desired. They can also be supplied from pre-anodized sheets on special order. Each pattern is regularly manufactured from .050 in. and .100 in. aluminum with openings of approximately 1.25 in. by .40 in.

Circle No. 205 on Reader Service Card.

Finned Tubular Heating Elements



Mass produced, noiseless finned tubular heating elements in rating sizes up to 350 watts per foot in convection and 1000 watts per foot with fan cooling have been announced by Still-Man Mfg. Corp. Designed for fan heater, blower coils and convection baseboard applications, the Thermofin elements are lint-free, assure maximum transfer, and eliminate objectionable noises caused by expansion and contraction. Continuous lengths of up to 12 feet are available with copper-hydrogen brazed steel fins spaced according to application requirements.

Circle No. 206 on Reader Service Card.

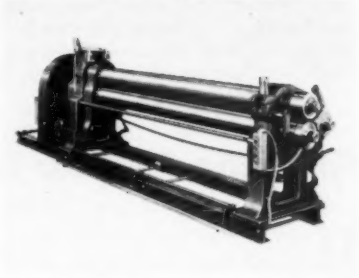
For further information on New Supplies and Equipment, use Reader Service Card on pages 23 & 24.

Drawing Furnace With Pusher Feed

This special drawing furnace, designed and built by the Waltz Furnace Co., features automatic pushers for loading and unloading work baskets. The furnace is designed to accommodate three work baskets, each 24 inches wide, 36 inches long and 12 inches high.

Circle No. 207 on Reader Service Card.

Sheet And Angle Bending Roll

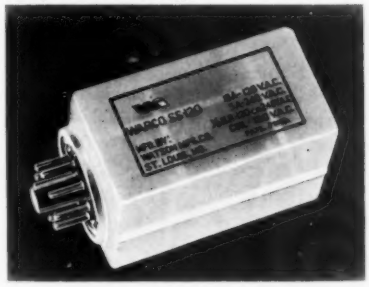


Hendley & Whittemore Co. has developed one machine that does the job of several. It is an initial-type sheet bending roll in capacities from 20 gauge to 7/16 in. in widths up to 122 in., and an angle bending roll that will take angles from 1 in. by 1 in. by ¼ in. to 2½ in. by 2½ in. by ¼ in. It is designed for use in shops of all sizes.

The rolls of the machine have extended journals with adjustable guide rollers and interchangeable roll heads so that, in addition to angles, tees, channels, flat and round bars can be shaped.

Circle No. 208 on Reader Service Card.

Snap-Action Relay



A plug-in, enclosed two-pole double throw snap-action relay is announced by Warco Industries, Inc. The relay, designated Model SS120, is rated at 10 amperes, 120 volts ac, 5 amperes, 240 volts ac, and 1/3 hp at 120 or 240 volts ac.

The entire SS120 unit, including enclosure, but excluding pins, measures 2-13/16 in. long by 1-1/2 in. by 1-13/16 in. The eight-pin octal plug is standard.

The enclosure, molded from nylon, is said to retain excellent physical and electrical properties over long periods even when subjected to continuous high temperatures.

Circle No. 209 on Reader Service Card.

Another new Wyandotte research-developed



metal-cleaning product!

NEW NORDALL emulsion cleaner locks out rust safely!



Here is a remarkable new emulsion cleaner that protects against rust longer – and without fire hazard, too! . . . Wyandotte's NEW NORDALL®!

Designed for spray cleaning steel, cast iron, and other metals either hot or cold, NEW NORDALL protects for up to *six weeks* in plant atmospheres. Perfectly suited for rust prevention between machining operations!

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For details of this extraordinary rust-proofing emulsion cleaner, call in your Wyandotte representative soon. TODAY, perhaps? *Wyandotte Chemicals Corporation, Wyandotte, Michigan. Also Los Nietos, California. Offices in principal cities.*

Other new Wyandotte products

MIL-ETCH®—Caustic-type aluminum etchant eliminates scale, produces bright matte finish, reduces maintenance.

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FERLON®—Alkaline derusting compound removes rust, light scale, oil, grease, paint, smut without harm to ferrous metals.

BUFSOL—The all-soluble product that lets you remove stubborn buffing compounds the modern, trouble-free way – without solvents.

*TRADEMARK

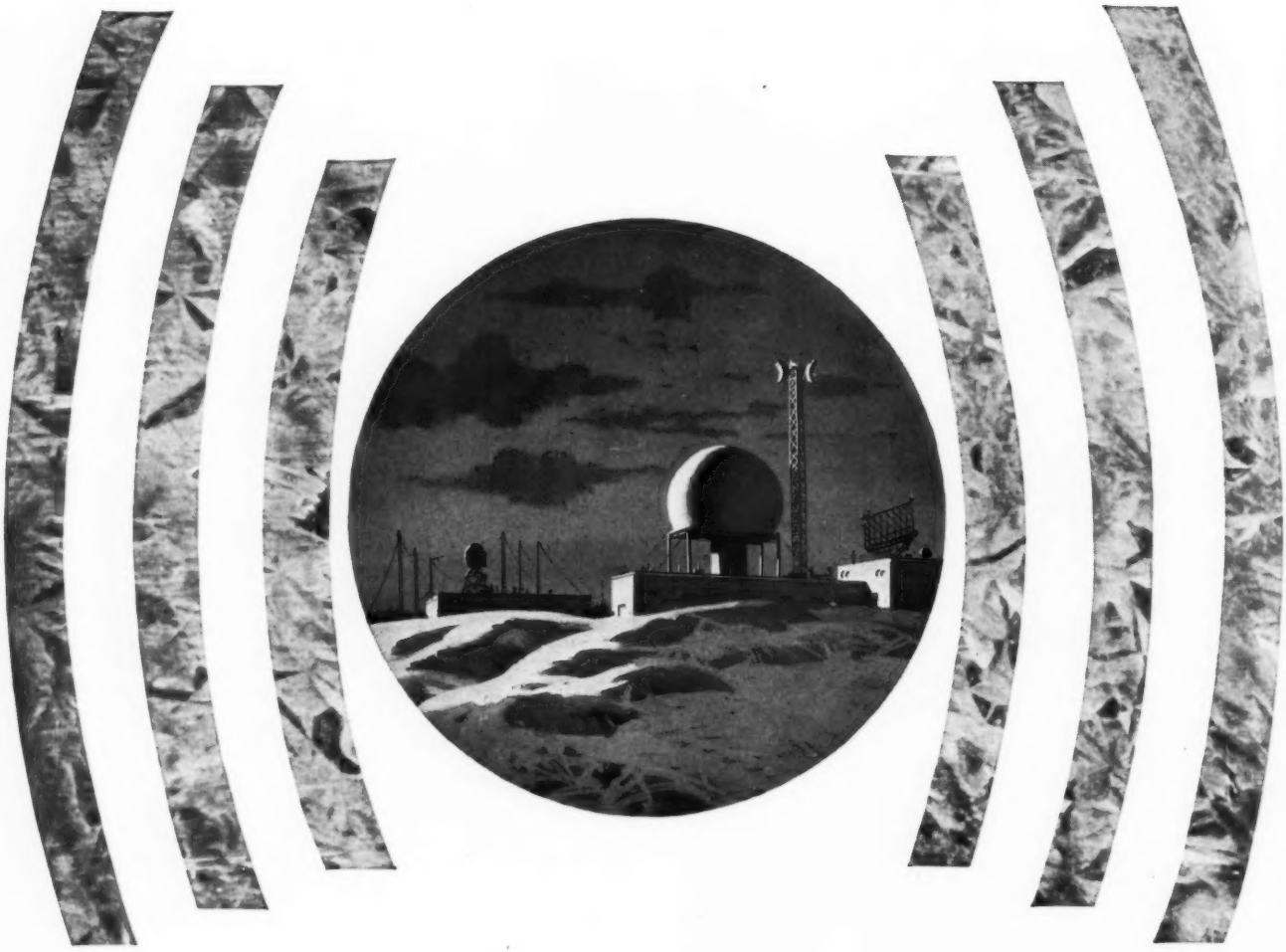
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The need? Maximum strength plus a defense against the DEW Line's dew point. Based north of the Arctic Circle, these buildings and their interior warmth will abut against bitter outside cold to create a temperature differential up to 130°—and a condensation-corrosion threat as extreme as the -60° surroundings. To eliminate the threat, each building will consist of: insulated galvanized steel floor construction, galvanized steel for outer skin of sidewalls, galvanized steel for inside (vapor barrier) face of sidewalls.

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Circle No. 369 on Reader Service Card.

MPM
personals

Allan L. Lenio has been appointed product manager, metal finishing, of **Kelite Corp.** Lenio will be located in the company's Chicago office and will be responsible for the development of metal finishing sales in the Midwestern sales region.

Ronald G. Lundeen has been appointed general manager of the U. S. Porcelain plant of the Thermador Div., **Norris-Thermador Corp.** Lundeen has been with U. S. Porcelain, which was recently acquired by Norris-Thermador, for nine years, the past five as plumbingware and panel sales manager.

Wendell C. Davis has been named president and general manager of **Steelcase, Inc.,** Grand Rapids, Mich. **Walter D. Idema,** who has been president of the metal office furniture company, will become chairman of the board. Davis has been president of Cribben & Sexton Co., Chicago, which is now owned by Waste King Corp.

Sequoia Mfg. Co., San Carlos, Calif., manufacturers of gas central heating and air conditioning units, has announced the following personnel changes: **Glenn A. Barnes,** to executive vice president and general manager from sales manager; **M. W. Stransky,** to vice president, research-development and engineering, from plant manager; **Garland F. Kneip,** to secretary-treasurer, from assistant treasurer. Robert H. Norris, president, has stated that Sequoia will continue contract manufacturing, but will also return to marketing its units under the Sequoia brand.



DAVIS



BARNES

Robert E. Casner has been elected a vice president of the **Crane Co.** and has been appointed as general manager of the **Plumbing, Heating & Air Conditioning Group** located in Johnstown, Pa. Casner was previously vice president of the Townsend Co., Beaver Falls, Pa.

William C. Nusbaum has been elected vice president of **Day-Brite Lighting, Inc.** Nusbaum was formerly assistant to the president, Emerson Electric Mfg. Co., of which Day-Brite is a wholly-owned subsidiary.

Sylvester D. Moorman has been elected a vice president of **Sunbeam Corp.** He will handle special assignments for President Robert P. Gwinn. Moorman was formerly vice president and general manager of the watch division of Elgin National Watch Co.

Daniel N. Gredys has been named general manager of **Perfection Division, Hupp Corp.,** according to an announcement by Don H. Gearheart, Hupp president. Gredys, with Perfection since his graduation from Case Institute of Technology in 1935, was previously vice president of engineering. He succeeds **A. J. DeFino,** recently appointed a group vice president of Hupp.

Gredys is a member of the Gas Appliance Manufacturers Association's infrared radiant unit heater group, the engineering committee of the unitary air conditioning section of the Air Conditioning and Refrigeration Institute, and the American Ordnance Association.



BOEHLER



GREDYS

Joseph J. Boehler has been named assistant to the vice president in charge of manufacturing of the **Heintz Div., Kelsey-Hayes Co.,** Philadelphia, Pa. Boehler was formerly director of industrial engineering for the company.

Herbert Riegelman has been named manager of a newly organized distribution planning operation for the **General Electric Radio and Television Div.** The new operation will initiate a detailed analysis of the current distribution structure employed by the division's various product departments at Decatur, Ill., and Utica and Syracuse, N. Y. Riegelman will maintain his office at division headquarters in De Witt, N. Y.

James K. Montgomery and **A. A. Barnhart** have been promoted to vice presidential positions by **Cribben and Sexton Co.** Montgomery becomes vice president of manufacturing. He was previously manager of manufacturing. Barnhart, previously product manager for Waste King, becomes vice president of domestic sales.

Joseph D. Lovely has been appointed coordinator of manufacturing and engineering for **Copeland Refrigeration Corp.** For the past three years he has been assistant chief engineer in Chrysler Corp.'s Central Engineering, in charge of vehicle air conditioning, heating and ventilating.



LOVELY



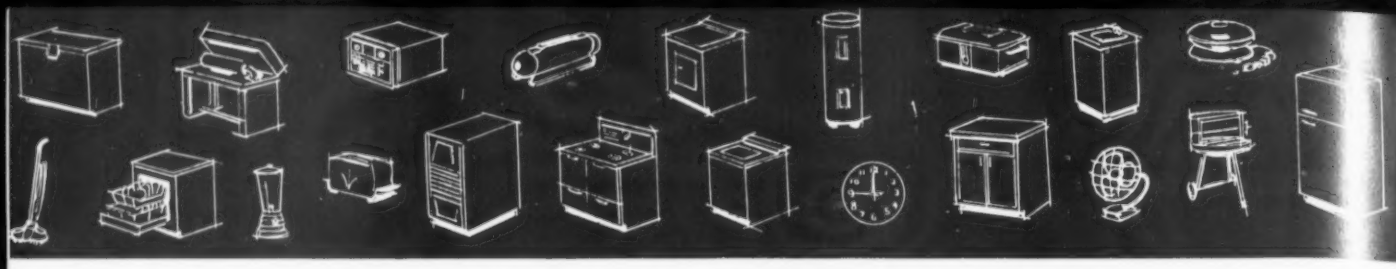
SYKORA

Robert K. Sykora has been appointed to the newly-created position of director of engineering for commercial laundry products, **Whirlpool Corp.** In announcing his appointment from manager of special products engineering, James Alaback, general manager of Whirlpool's laundry engineering division, said Sykora assumes direction of engineering services involving RCA Whirlpool coin-operated laundry and dry cleaning equipment; also additional new self-service appliances that may be developed in Whirlpool's research laboratories in the future.

Charles M. Ruprecht has been elected vice president in charge of manufacturing for the **Hussmann Refrigerator Co.** Ruprecht comes to Hussmann after fifteen years with American Brake Shoe Co., where he was most recently president of the National Bearing Div. He fills the position recently vacated by the resignation of William A. Vormehr.

J. G. Porter has been appointed manager of marketing research of the Household Refrigerator Dept., Major Appliance Div., **General Electric Co.** Also, **H. E. Brown** has been appointed manager of advertising and sales promotion of the Home Laundry Dept.

Thomas L. McKnight has been elected president of **United States Chemical Milling Corp.** Charles F. Lundquist, chairman of the board who made the announcement of McKnight's election,



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- Sems
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BOLTS

- Hex Head Bolts
- Square Head Bolts
- Carriage Bolts
- Lag Bolts
- Stove Bolts



NUTS

- Hex Nuts
- Square Nuts
- Castle Nuts
- Slotted Nuts
- Cap Nuts
- Lock Nuts
- Keps
- Machine Screw Nuts
- Wing Nuts



WASHERS

- Flat Washers
- Split Lock Washers
- Shakeproof Lock Washers



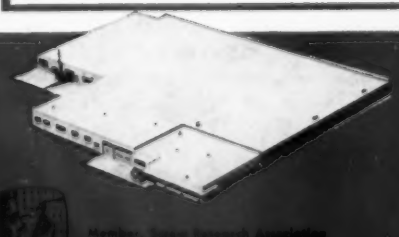
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also announced the election of **Edward K. Vincek** as secretary, **Charles F. Birkhauser** as assistant treasurer and **Robert H. Smith** as assistant secretary.

Arthur W. Slocum has been appointed national accounts sales manager, and **Eugene G. Balassie** has been advanced to the post of sales manager, paint and resin products for **DeSoto Chemical Coatings, Inc.** Slocum was formerly manager of industrial finishes sales and Balassie was sales manager for the firm's Illinois Div. in Chicago.



SLOCUM



BALASSIE

George P. Reichel has been named manager of customer service of **Macco Products Co.**, Chicago.

Edmund Horner has been appointed research chemist by **MacDermid, Inc.**, Waterbury, Conn. He was most recently associated with the Oakite Co.



REICHEL



HORNER

Daniel J. Coughlin has been appointed general sales manager of **The Brewer-Titchener Corp.**, Cortland, N. Y. He will be in overall charge of all marketing and sales activities, succeeding Frederic A. Celler, who has resigned to join the International Div. of AMP, Inc. **Raymond J. Considine** is replacing Coughlin as sales manager of the Marine and Industrial Hardware Div.

Aluminum Co. of America has announced the appointment of **Richard M. Smith** as development manager, consumer durable goods, a new position in the company's development division.

Ranco, Inc. has announced four major appointments. **A. P. McDiarmid,** formerly secretary-treasurer, becomes vice

tailor-made coats!

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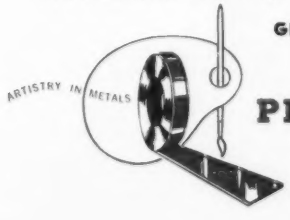
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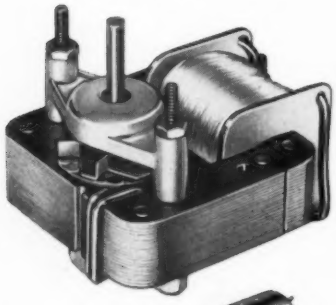
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president-secretary-treasurer; **J. H. Manecke,** former general sales manager, is now vice president-sales; **J. E. Kumler,** former chief engineer, becomes vice president-research and engineering; and **W. R. Opp** was renamed vice president-manufacturing.

J. Paul Jones has been elected to the board of directors of **H. W. Tuttle & Co.,** and also appointed vice president of engineering and manufacturing. In his new position, he will be responsible for the development and manufacture of all current and new products of the company.

Jonathan Smith has been appointed vice president of sales of **Sunbeam Equipment Corp.,** Meadville, Pa., manufacturer of industrial heat treating furnaces. He was formerly project manager.



JONES



J. SMITH

Robert E. Lehman and **J. Corson Smith** have been appointed national accounts representatives for the Pigments and Color Dept. of **The Glidden Co.'s** Chemicals Div. They will headquarter at the home office of the Chemicals Div. in Baltimore, Md., and will report to James C. Rankin, national accounts manager for the division.



J. C. SMITH



LEHMAN

James R. Petty has been named manager of the Milwaukee sales office of **Fairmont Aluminum Co.** For the past four years Petty has been a salesman for Fairmont and assigned to the Chicago district office.

Edward N. Harris has been elected vice president of sales of **Bohn Aluminum & Brass Corp.** He has been associated with Bohn since 1953 in various sales and manufacturing capacities. His

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Pinpoint the Prospects!

Make sure of Impact!

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MPM's editors have contacted every manufacturer of automatic merchandising equipment, have counselled with the industry's national association, and have gone into the field to secure feature material.

This editorial emphasis perfectly complements MPM's depth of coverage. MPM reaches key men in every plant in the U.S. engaged in producing vending machines—men in top management, purchasing, design, engineering, and key plant management and supervision.

A consistent program in MPM will guarantee your client exposure among the 150 companies principally engaged in producing automatic merchandising equipment—and among those companies like Westinghouse and Geo. D. Roper which, while principally engaged in appliance production, also produce coin operated equipment.

For more facts and information on the vending machine market, or for a copy of MPM's 1960 section on the automatic merchandising industry, write, wire or phone . . .



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most recent assignment has been plant manager of the company's South Haven, Mich. plant.

Harold F. Griffiths has been appointed sales manager of **Federal Tool and Mfg. Co.**, Minneapolis, Minn., a manufacturer of short run stampings. Griffiths will direct marketing activities throughout the United States for the company which also has plants and offices in Rochester, N.Y. and Hollywood, Calif.

Robert M. Simpson has been appointed assistant director of sales of the **Crucible Steel Co. of America.** In this new position, Simpson will assist in the direction of all sales activity of the company and will act as second in command to Josef H. Buerger, Jr., director of sales. Simpson's most recent assignment with Crucible was as assistant general manager-field sales.

Charles J. Brown has been named to the newly-created position of executive vice president of **Jones & Laughlin Steel Corp.'s** Stainless and Strip Div. Brown, who has been vice president of the Freeport Nickel Co., will be located at division headquarters in Detroit.



SIMPSON

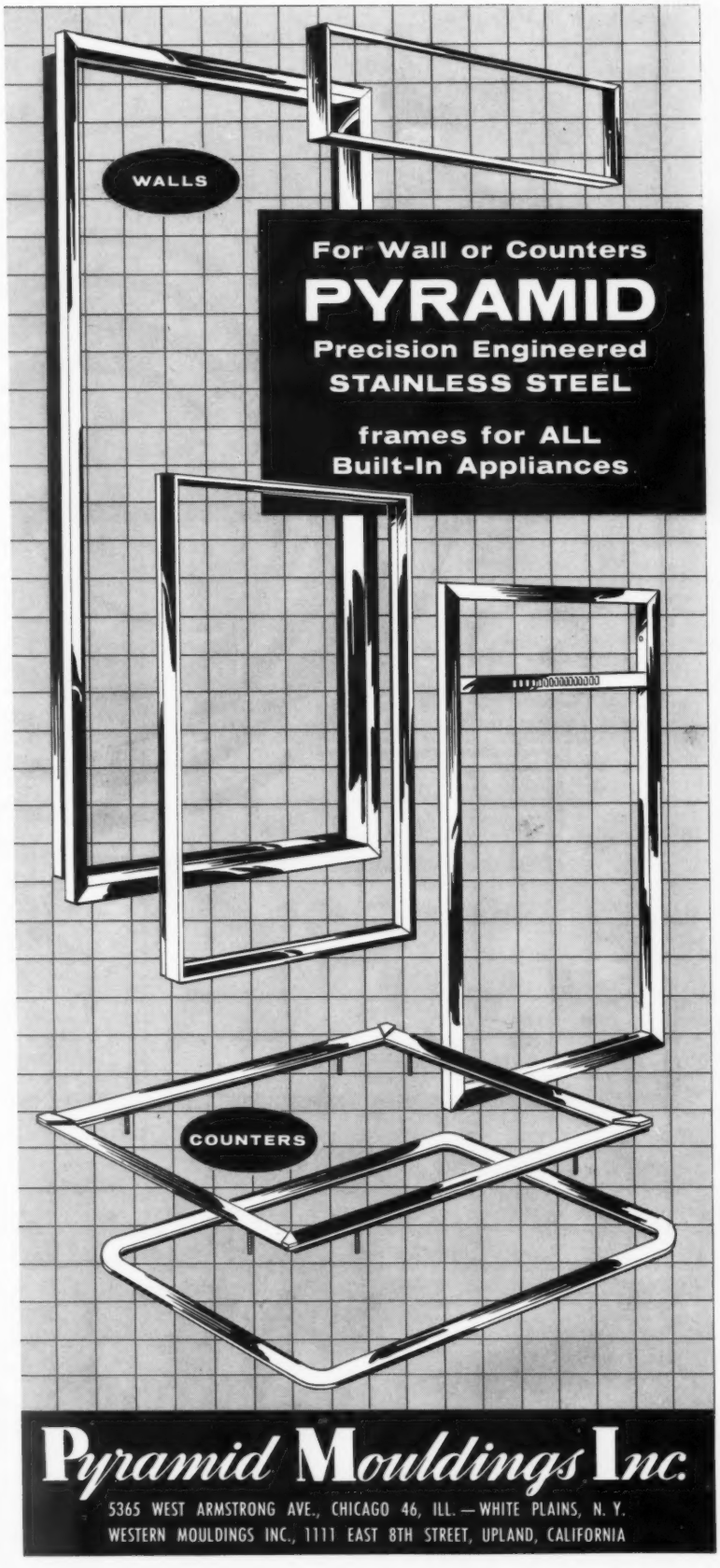


BROWN

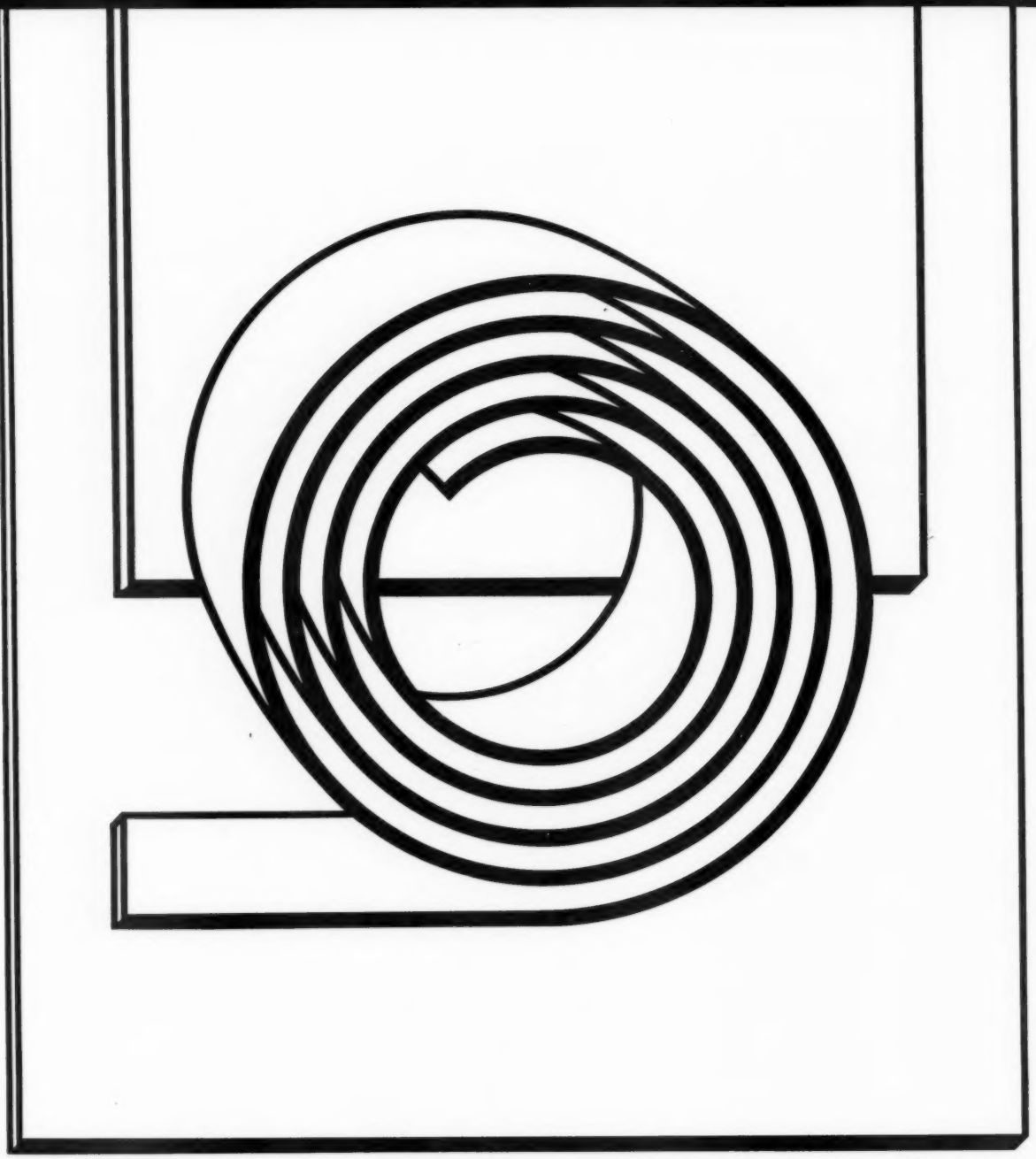
Burnett S. Tremlett has been named president of **Quicfrez Inc.** by a recent action of the board of directors. He succeeds D. D. Ashton, who has been president for the last several years.

Eugene E. Broker has been appointed general manufacturing manager of the **Parts Div., Sylvania Electric Products Inc.,** it was announced by Merle W. Kremer, vice president and general manager of the division.

David D. Mason, formerly president of the Link Aviation Div., General Precision Equipment Corp., has been elected executive vice president of **National Rejectors, Inc.,** a subsidiary of Universal Match Corp., it was announced by John L. Wilson, president of Universal Match and National Rejectors.



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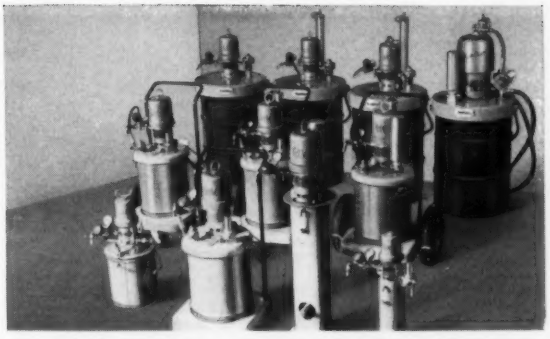
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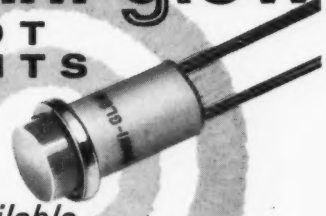
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add light to the life of your product!



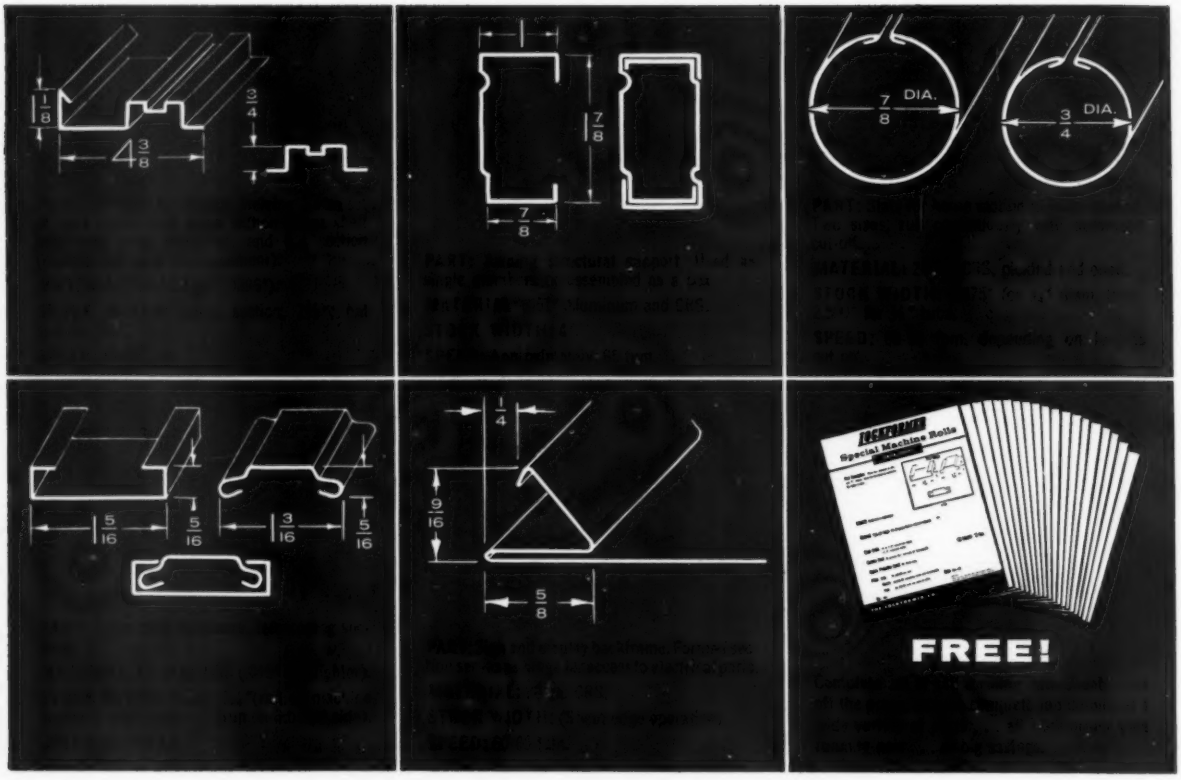
LONG LIFE—usually outlasts the equipment on which it is used. Vibration proof, shock proof—gives thousands of peak operating hours. STYLING—every requirement covered with wide variety of lens colors and shapes, lens imprints, ring finishes, etc.; adds beauty to any product. SIMPLIFIES PRODUCTION—only ½-inch hole needed—mounts with push-on speed nut or snap-fits into your panel... and SERVICE—units made to **your** requirements, delivered to meet **your** production schedules... quantities from 1 to 1,000,000.

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5 More Manufacturers Discover How
TO MAKE IT AT LESS COST
with LOCKFORMER Roll Forming Equipment

. . . and there are 5 excellent reasons why they turned to roll forming their parts on Lockformer equipment:



1. COMPLEX CONTOURS IN ONE OPERATION.

2. PRODUCTION RATES NO OTHER FORMING METHOD COULD EQUAL (these parts being formed at speeds from 60 to 95 fpm)!

3. ONLY ONE SEMI-SKILLED OPERATOR NEEDED.

4. UNIFORM SHAPES AND DIMENSIONS, FIRST PIECE TO LAST.

5. SO LITTLE AN INVESTMENT. (Machine and custom rolls to produce the above parts range from only $4,875. to $6,650. That's *complete*. No high development costs—Lockformer special rolls are simply added to a standard mass-produced chassis.)

Manufactured by
THE LOCKFORMER COMPANY
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In Canada: Brown Boggs Foundry & Machine Co., Ltd., Hamilton, Ont.

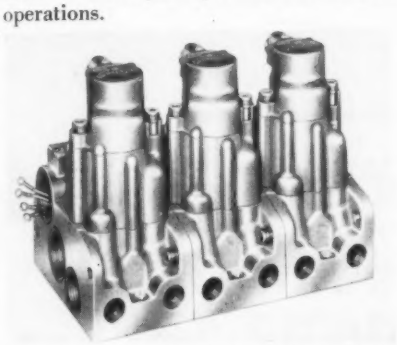
LOCKFORMER®
TIME SAVING, MONEY MAKING EQUIPMENT

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Modular base designed for manifold mounting

A NEW MODULAR MANIFOLD BASE, designed for multiple manifold mounting of ½ in. PDQ control valves, has been announced by Hunt Valve Co. Meeting JIC standards and featuring common supply, exhaust and wiring conduit ports, the modular manifold bases can be ganged end-to-end to manifold two or more valves in a single, compact assembly.

Valves of this type are used to control compressed air. Some applications are stamping, blanking, forming and welding of sheet metal in the appliance industry. They are also used in conveyor systems and a multitude of assembly operations.



New modular manifold base permits manifolding of two or more ½ in. PDQ valves. Manifold mounting simplifies piping and wiring, and conserves space.

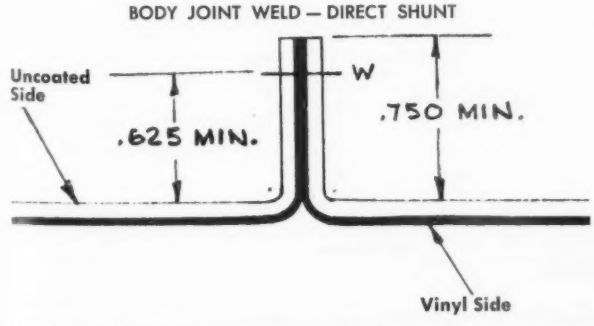
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Shunt welding vinyl laminates

WELDING VINYL METAL LAMINATES is no longer a problem, according to engineers at Arvin Industries, Inc., a leading producer of sheets, coils and fabricated parts from vinyl laminates, under the trade name Arvinyl.

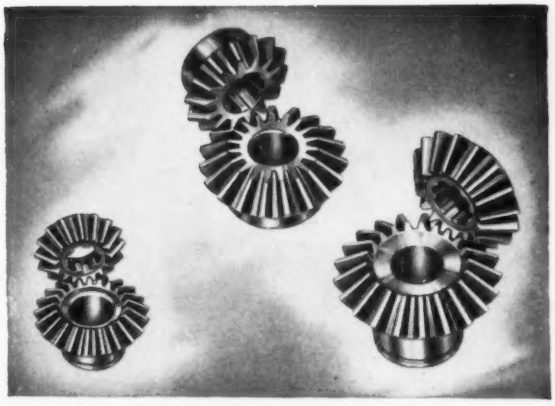
Arvin, in connection with work on magnetic-force projection welding of vinyl laminates, has announced the development of two new direct shunt welds which eliminate the need for projections or grinding away the vinyl before the weld is made. Working with Precision Welder and Flexopress Corp., Cincinnati, Arvin engineers perfected these processes and have had them in commercial use since August, 1960. Hundreds of welds per hour are made joining Arvinyl parts of 20 and 22-gauge steel with weld strength equaling AWS standards, and other gauges may be used with these processes, the report states.

The company feels that these developments further the opportunities for using vinyl laminates for refrigerator and vending machine housings, food freezers, office furniture and cabinets, and other fabricated metal products.



This type weld will cause damage to the vinyl surface of laminate at point of weld — but if designed correctly this damage will not appear on the exterior surface of the vinyl metal laminate.

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Shortest way to better production, smoother product performance: G. S. Bevels

Nobody argues with the old axiom, "Time is Money"—and it's more and more costly to have assembly operations interrupted or slowed down by ill-fitting or defective parts. G.S. customers (whose roster reads like a Blue Book of American industry) don't worry about such problems. They've learned that they can rely on famous G.S. precision manufacturing methods and rigid inspection systems for Small Gearing made *right*, every time—Gearing which meets demanding specifications, makes assembly smoother, gives efficient performance in product use.

Perhaps you use full-generated and hardened Straight Tooth Bevel Gears cut from alloy steels, like those illustrated (they're used in outboard motors). Perhaps you need Spiral Bevels or Zerols. Whatever your requirements for Bevel Gearing, including Helicals, Internals or other types, G.S. engineering and G.S. quality belong on your production team!

SEND FOR FREE
Small Gearing Guide. Contains useful charts. Send for your copy today!

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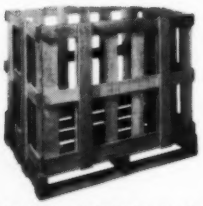
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Save time . . . money . . . labor . . . storage space. Chicago Mill materials handling containers provide faster . . . easier . . . safer means of moving, containing and storing bulk materials!

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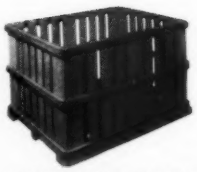
WOODSTEEL BOXES
Nesting and Square Types



HINGED CORNER MATS
Collapsible Type



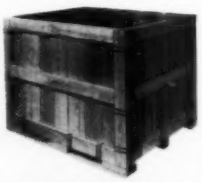
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Re-usable and Palletized



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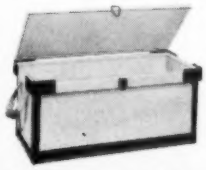
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Collapsible and Re-usable



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STEEL STRAPPED CONTAINERS
For the Heaviest Loads



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safe transit

editorial voice of the national safe transit program

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DANA CHASE PUBLICATIONS, INC.

Devoted to improving packaging, shipping, and materials handling methods for the appliance and metal products manufacturing industries. This section contains information on plant experience and industry advances for improving packaging and shipping methods, and prevention of in-transit loss. It also contains information on the National Safe Transit Committee's preshipmet testing program and reports on NST activities.

Preshipment testing program ensures safe delivery and reduces cost

how a portable tool manufacturer eliminated "overpacking" through effective use of its preshipment testing laboratory

THE BLACK & DECKER MFG. CO., Towson, Md., believes that electric tools require a shipping carton that will serve a two-fold purpose; adequate protection of the tool to ensure delivery to the customer in the same condition it left the factory — and — to provide an attractive display case for the tool at point of sale. The company operates its own preshipment testing laboratory for the packaged product testing of electric tools for industry, shop, farm and home. The company reports a high degree of success in achieving both of the two packaging goals established for its entire product line.

The old testing method

"Every packaged item in the product line," according to William H. Drews, who was packaging coordinator when the company's test project was initiated, "is periodically subjected to a series of tests to determine the *packaged product's* ability to withstand the rigors of transportation." These tests were originally conducted by trial cross-country shipment utilizing a common carrier. There were many disadvantages to this method. During new product development, availability of samples is at a premium and test shipments always required at least two weeks to complete. Also, there was complete lack of control of the test shipment and no knowledge of the severity of handling, storage or transit conditions.

Testing laboratory installed

To remedy the situation, the company decided to install its own testing laboratory to include the equipment necessary for meeting the requirements of the National Safe Transit Committee test procedures.

The equipment includes a vibrating machine equipped with adjustable fences to position and constrain packaged products which are stacked during testing. By simple adjustment, the speed or number of cycles per minute may be varied, as can the motion or combination of motions produced.

The drop tester used is designed to permit controlled impact at exact heights. The machine supplies the advantage of subjecting all sides, edges, and corners of the package to shock. The height of drop is adjustable from a minimum of 12 inches to a maximum of 60 inches.

The laboratory is equipped to evaluate packaged products *before* they leave the factory. The controlled tests allow first-hand observation of packaging failures under exact destructive conditions and at the moment they occur.

Too much protection

As a result of these tests, Black & Decker verified its prior tendency to provide *more packaging protection than actually required*. The controlled testing allowed improvement of specific problem areas without the necessity of beefing up the entire package. The laboratory equipment provides testing conditions equal to 1000 miles of normal transportation in approximately one hour and 15 minutes, where previous methods required two weeks.

While the prior practice of over-packaging provided the product with complete protection, it was, of course, unnecessarily costly. The inplant laboratory tests have enabled the company to effect substantial savings in packaging costs. In the development of the carton for its utility hedge trimmer, for example, a 200-lb test board was used in the construction of the sample package. Subsequent testing revealed the product to be over-packaged and a second sample was prepared and tested, constructed of a 125-lb test board. Based on the size of this carton, the change in materials amounted to a saving of eight cents per package.

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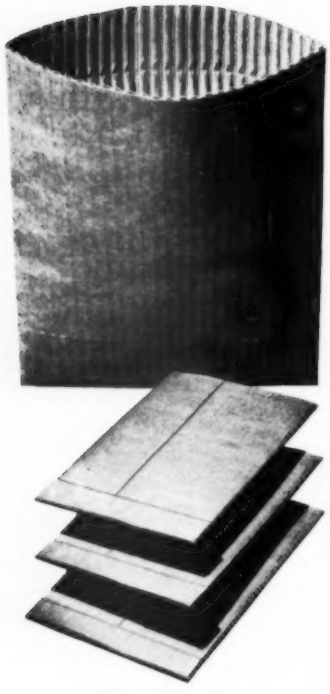


Vibration machine in the Black & Decker packaged product testing laboratory. Overpackaging discovered as a result of preshipment tests was eliminated with resultant savings in costs.

PHOTO COURTESY L. A. B. CORP.

"All manufacturing, engineering, and quality efforts are in vain if the product reaches its destination in a damaged condition."





PROTECT
FINISHED PARTS

Here's a fast, low-cost way to give cushioned protection to finished parts — in master cartons, in-plant storage, or shipment. Fast and easy to use, Corro-Bags have cushioning protection built in. No shredded fillers to spill out if bag is punctured. Corro-Bags are available in a range of standard sizes from your nearby Sherman distributor. For a size range of samples, write Dept. M.

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DIVISION OF St.Regis PAPER COMPANY

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SAFE TRANSIT NEWS

R. B. Holmgren Honored

R. Bruce Holmgren has received a "Packaging Man of the Year" award for outstanding contributions to packaging education from the Michigan State University Packaging Society at its recent annual banquet.

Holmgren, editor of *Package Engineering*, is chairman of the industry advisory committee of MSU's school of packaging. He is also vice chairman of the MSU Packaging Foundation, a nonprofit corporation formed to develop financial support for the school of packaging.

Record Sales, Profits Reported

General American Transportation Corp.'s net profits and sales in 1960 were the largest in the company's history. According to the company's annual statement, net earnings were $19,250,978, compared with $16,587,910 in 1959. Total income in 1960 exceeded the previous year by approximately $50 million.

Packagers Elect President

F. C. Hayes, president of Container Statistics, Ltd., was elected president of the Packaging Association of Canada at the group's recent annual meeting.

The association also elected seven executive committee members and seven directors.

International Paper to Open Two Manufacturing Plants

The Container Div. of the International Paper Co. will soon open two new manufacturing plants — one in Northlake, Ill., a Chicago suburb, and another in Larimore, St. Louis County, Mo.

The 260,000-sq-ft Northlake facility is scheduled to start operations in November. The plant, which will manufacture corrugated shipping containers, will be the largest International Paper operation of its type.

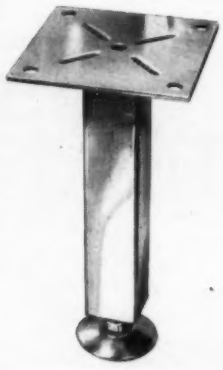
A July opening is planned for the Larimore plant, an 86,000-sq-ft facility situated on a 16-acre tract. The new installation will augment kraft board container production facilities in St. Louis.

LEGS...
CUSTOM DESIGNED
(Available from Stock)

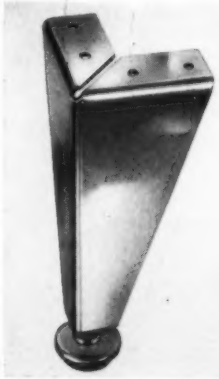
A new line developed for the Vending Machine Industry. They are specially designed and styled to give users choice of legs to complement machine and decor. They are finished in satin Chrome and satin Brass. Other finishes are also available. They are particularly popular for existing machines which, due to sanitary regulations, must be raised off the floor.



TYPE VM — An extra heavy duty Leg made from ⅛" steel. Tests prove it will support 2,000 lbs. vertical weight. Ideal for new or conversion machines. Lengths, 4"-5"-6"-7"-8" with nut for leveling glide.



TYPE T5 TAPER — Available in lengths, 4"-5"-6"-7"-8", with or without nut for leveling glide. Hanger bolt for straight or angle mounting plates.



TYPE SSW — Tubular steel, 1" square, welded to 3" square mounting plate. Lengths, 4"-5"-6"-7"-8", with plastic or leveling glide.

TREND INDUSTRIES
2911 West Carroll Avenue
CHICAGO 12

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COMING FEATURES

GENERAL

SPECIAL REPORT: THE EBCO MFG. CO.

STANDARDIZATION — FOURTH OF A SERIES

OPERATION OF A 12-PLANT QUALITY CONTROL SYSTEM

NEW ENGINEERING SERVICE FOR OEM

DESIGN

A NEW COMPACT GAS-FIRED BOILER

ELECTRIC FURNACE MEETS SPECIAL NEEDS OF MOBILE HOMES

FABRICATION

REMOVING SOLDERING FLUX FROM STAINLESS STEEL

HOW KAISER REDUCED BATHTUB SCRAP

FINISHING

PORCELAIN ENAMELING MAGNESIUM — A TECHNICAL BREAKTHROUGH

A COMPACT, VERSATILE FINISHING SYSTEM FOR TYPEWRITER PARTS

STRAIN GAUGES FOR EVALUATING STRESSES IN PORCELAIN ENAMELED PRODUCTS

HANDLING

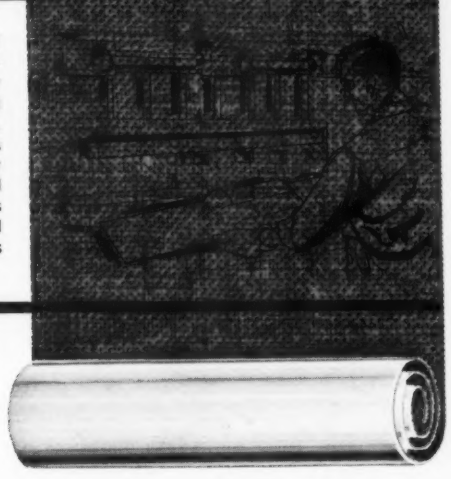
NEW TECHNIQUE FOR HANDLING PALLETIZED LOADS

HOW SMALL PRESS BRAKES PAY BIG DIVIDENDS

Arvinyl

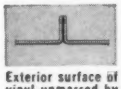
AMERICA'S NO. 1 VINYL LAMINATE NOW AVAILABLE IN NEW WIDE COIL FORM!

Arvin has added new wide coil facilities—36" and over—to its narrow coil and sheet facilities. This addition makes Arvin the only source for coil and sheet laminates as well as fabricated Arvinyl stampings and assemblies.

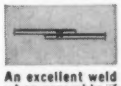


NEW ARVIN WELDING TECHNIQUES

Body Joint Welds-High Production Speeds



Exterior surface of vinyl unmarred by weld. Vinyl doesn't have to be ground away before welding!



An excellent weld when assembly of trim or other component parts hide the point of welding.

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Arvin®

America's largest vinyl metal laminator

ARVIN INDUSTRIES, INC. • Columbus, Indiana
Arvinyl Division

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Should be aggressive with minimum of five years supervisory experience in this field and know the importance of quantity and quality control.

These positions, available in S. E. Wisconsin, will offer top salary and excellent fringe benefits including profit sharing.

Our employees know of this ad. Send complete confidential resumé to **Box 5B, METAL PRODUCTS MANUFACTURING, York St. at Park Avenue, Elmhurst, Ill.**

Preshipment testing

→ FROM PAGE 101

According to Black & Decker packaging engineers, the packaged product testing program has proved that an adequate package with full protection to the product can be obtained, using a lighter, less expensive board, and that on the basis of cost-saving figures *for one package*, the testing equipment can pay for itself in approximately one year.

EDITOR'S NOTE: Black & Decker Mfg. Co. is listed as a certified manufacturer by National Safe Transit Committee.

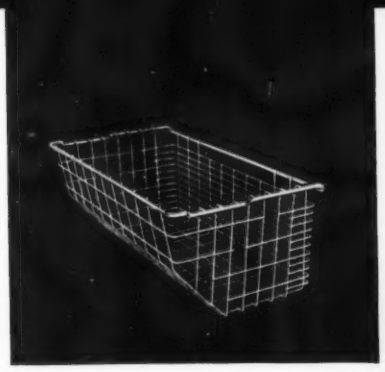
Industry news

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clude processes for high-temperature protective ceramic coatings, ceramic-metal composites, ceramic coatings as adhesives, flame-sprayed ceramic and cermet coatings for metals, and ceramic coatings on dielectrics.

L. S. O'Bannon, Battelle Memorial Institute, is chairman of the special committee appointed to inaugurate the fall meeting. Vice chairman is R. S. Sheldon, Whirlpool.

Other members of the committee are Dwight G. Bennett, University of Illinois; Samuel W. Bradstreet, Armour Research Foundation; Dwight G. Moore, National Bureau of Standards; Thomas S. Shevlin, Ohio State University; W. Michael Sterry, Boeing Aircraft; J. H. Terry, General Electric; and Jesse D. Walton, Jr., Georgia Institute of Technology.

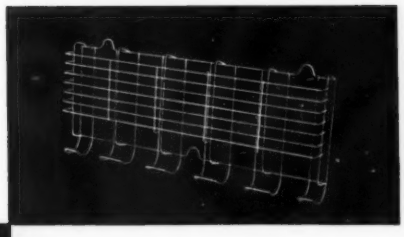




EVER THINK ABOUT

WIRE?



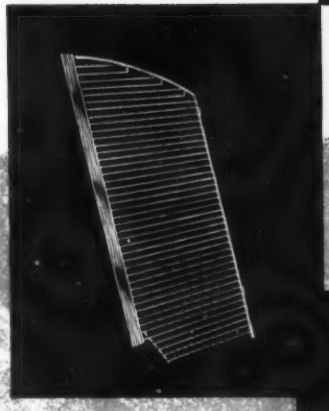


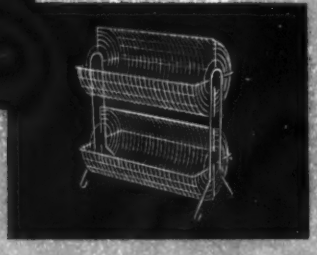
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Then, call in Union Steel's Contract Wire specialists and let them prove the point that "wire can do the job better!"



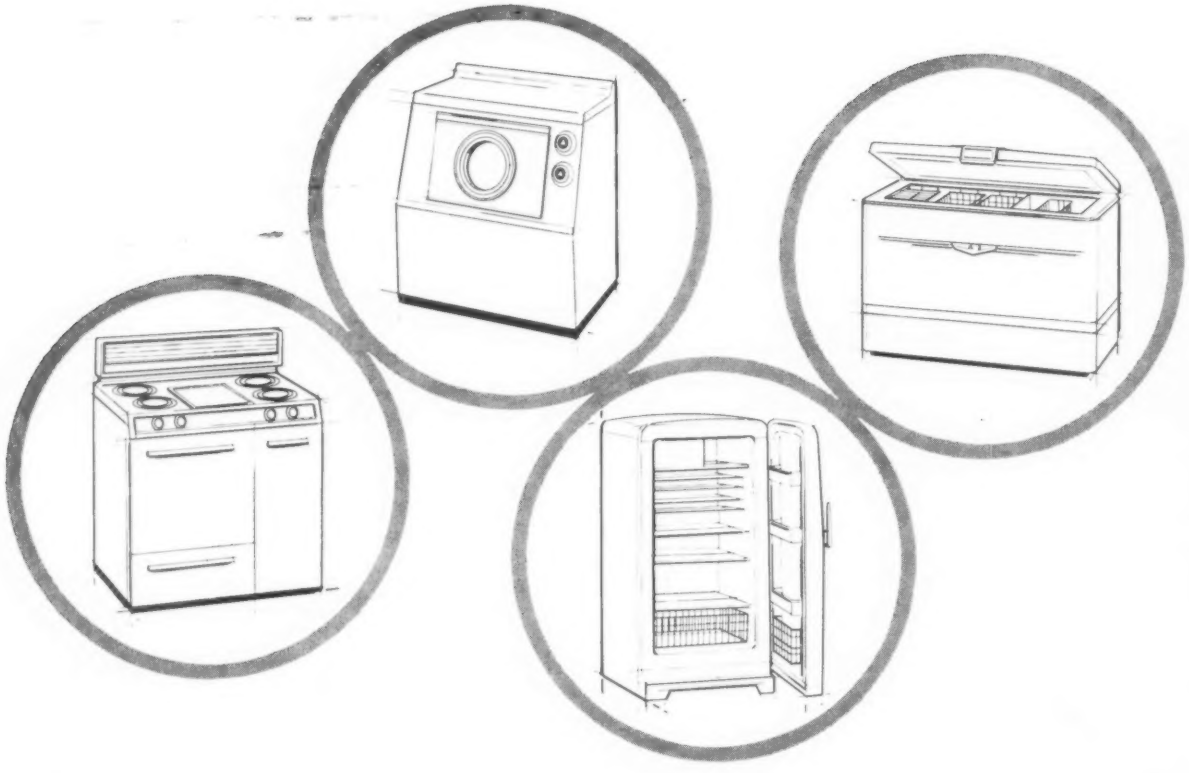


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NOTES FROM A DESIGNER'S SKETCH BOOK

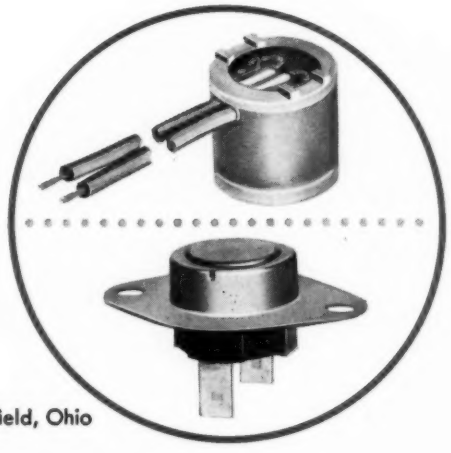


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